



AMERICAN GAS

Association

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MARCH 1946

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YOU LAMENT

Oh, if you could only turn
your "ugly duckling"
kitchen into one of those
slick, new, streamlined affairs!

The kind you've read about . . .
light, clean, efficient and beautiful!



WE PRESENT...

. . . the answer! The Gas industry's latest "New Freedom Gas Kitchen" design . . . created especially to meet the "we-love-our-old-house-but-we-want-a-new-kitchen" problem! See how the back porch has been transformed into a convenient dining nook!

How the 3 major work units are grouped together in a smooth, unbroken "production line".

What's more, like every "New Freedom Gas Kitchen" it's unbelievably free from unwanted heat and cooking odors!

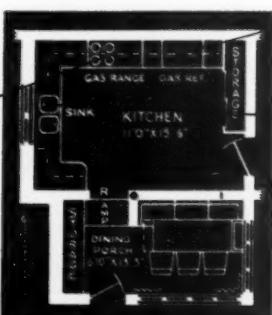
...THE WORK SAVINGEST KITCHEN OF THE CENTURY!



OLD HOUSE—NEW KITCHEN! . . . ANOTHER "NEW FREEDOM GAS KITCHEN" DESIGN

Whether it's brand new or remodeled—every "New Freedom Gas Kitchen" gives you 3 major "freedoms"

FREEDOM FROM COOKING CARES! You just set the automatic clock controls of your wonderful new Gas range and let the dinner take care of itself! For top-burner speed and flexibility . . . foolproof baking, broiling and roasting . . . there's nothing to equal a modern Gas range! Choose yours from the many new designs now available. And look for the CP seal!



FREEDOM FROM FOOD STORAGE PROBLEMS! Your silent, economical-to-run, new Gas refrigerator . . . keeps more foods fresh longer! And there's not a single moving part in the freezing system to wear out or break down!

FREEDOM FROM HOT WATER WORRIES! There's always plenty of hot water—for dishes, laundry and bath—thanks to that new, automatic Gas water-heater! And it's economical, too! Why not start planning your "New Freedom Gas Kitchen" today?

GAS



THE WONDER FLAME
THAT COOLS AS WELL AS HEATS

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AMERICAN GAS ASSOCIATION



A glance at the contents of this issue will show that the gas business is still mightily concerned and absorbed in pursuing certain definite and well-established trends. It is trying first of all to fill a gap which the war helped widen—a lack of technically trained personnel with which to carry on vital research projects. Mr. Shaner in the leading article touches on the seriousness of this problem. . . . Next it is continuing and accelerating its utilization research so that the housewife will get the best and most efficient tools with which to lighten her domestic labors—a fact made readily apparent to all who attended the Cleveland technical conference. Some of the fruits of this endeavor are told in the broiling and baking features. . . . A third trend, not confined to the gas industry, is the emphasis on sales promotion. Servel announces its entry into complete kitchen merchandising with exclusive gas features; Mr. Rohde continues to bear the torch for new methods in selling water heating; Miss Soule tells how home service should organize to fit the new scheme of things. . . . Finally, the convention calendar shows a trend toward resumption of many war-cancelled meetings.

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JAMES M. BEALL, *Editor*

Trends in Technology

TECHNOLOGICAL progress was rapid in the period immediately preceding World War II. Metallurgists were steadily gaining new knowledge on ferrous and nonferrous metals and on their applications in new and improved products. During this prewar period, all technological development, including that in the field of metallurgy, followed a fairly definite pattern. A certain portion of the technical men in a given profession were working on basic research. They were trying to wrest new knowledge from the unknown. At the same time there were other technical men engaged in applying this knowledge to the current problems of industry. Under this system, which was working rather smoothly prior to the war, there was always a comfortable reservoir of knowledge gained through basic research available for utilization in solving industry's most pressing problems in technology.

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Then the war came. With it came a sudden demand that important metallurgical problems be solved quickly. The full force of our technical resources was directed toward accomplishing in weeks work which normally would have required months or even years. As a result, technical progress in some lines was speeded up by at least 10 times its normal pace. Metallurgists contributed magnificently to the success of the war effort. They performed miracles under pressure.

But while it is true that progress in some lines advanced tenfold during the war, it is also true that these gains were at the expense of losses in another field. In pointing our efforts to solving current problems whose solution would help win the war, we diverted many of our most skillful scientists from their normal pursuit of basic research. In so

Address before The Industrial Gas Breakfast, Hollenden Hotel, Cleveland, February 6, 1946.

BY E. L. SHANER

President, Penton Publishing Co., and
Editor-in-Chief of "Steel,"
Cleveland, Ohio

doing, we caused our reservoir of knowledge derived from fundamental research to shrink alarmingly.

Now that the war is over, we face the formidable task of restoring knowledge to this reservoir. We must increase our research activities quickly and by a great margin. Fortunately we will have the physical facilities to do this satisfactorily. Many large corporations are giving new or expanded research laboratories top priority in their postwar plans. General Motors, General Electric, Westinghouse and scores of other corporations already have announced plans for "research centers" that will surpass anything in laboratories that we have known in the past.

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Unfortunately, however, we are going to have trouble in staffing these laboratories with adequate personnel. This is because our nation made a serious mistake in 1941, a mistake that no other industrial nation made in World War II. Our government in Washington failed to recognize the need of maintaining a steady flow of technically trained men from the technical schools and universities. It permitted the Army and Navy to draft these men and to set them at work in the armed services—often at routine jobs that could have been performed by any able-bodied person. England, profiting from its experience in World War I, did not make this mistake. It kept many of its engineering students in training. So did Russia, France, China, Canada and even Germany.

So today the United States, faced with an acute demand for more technically trained men, is 100,000 short. We are short 100,000 men from four graduating classes who right now should be going into these new laboratories where they could help to refill our depleted reservoir of technical knowledge.

Now a word as to the new environment in which metal-

Opposite: Windows of one of the Los Angeles buildings of the Southern California Gas Company offer a very interesting study in composition. This unusual picture was taken by Mel Jones of the Southern California Company

lurgists will be working during the post-war period. Professional men live two lives. For instance, in one life a metallurgist practices his profession of metallurgy. In the other, he enjoys his rights and shares his responsibilities as a citizen. In the past we have not always paid much heed to this distinction. Perhaps we gave too little attention to our responsibilities as citizens.

From now on, we cannot afford to neglect our responsibilities as citizens. We have seen how scientific progress is outdistancing our development in economics and politics. If we let matters take their own course, our advances in science will so far outrun our ability to conduct our economic and political affairs that science will create a Frankenstein which—unguided and uncontrolled—might destroy our civilization.

American System Best

Recent events emphasize this danger. The formation of the United Nations Organization, the advent of the atomic bomb, the reflection of a radar impulse by the moon, the spectacular achievements in jet propulsion and the rapid progress in many other lines of development all present new problems that will tax our skills and abilities to the limit. We face the challenge of solving these problems in a way that will make ours a better world in which to live.

This brings us to the question as to how this worthy objective is to be achieved. It seems to me that on the basis of the record to date, the American system is the system best qualified for the job. With only one-fifteenth of

the world's population, the United States now wields economic power equal to that of all the rest of the world put together. This is no accident. It is because our system of reasonably free enterprise has worked better than any other system.

Naturally, the people in all other countries envy our success and would like to duplicate it. A group of European nations has hired consultants to map plans for those nations that will elevate their standards of living through expanding their industrial activity. They have learned that in the United States about \$75 worth of basic primary materials increases in value to \$600 when manufactured into an automobile, to \$1500 when put into electrical equipment and to \$2000 when fabricated into a machine tool. Europe wants to find the secret that enables us to do this. Russia is striving to find it. China needs to find it. In short, most of the world is clamoring for a higher standard of living and would like to use the American formula to accomplish it.

In view of this attitude on the part of all of the rest of the world, it is curious that we find in our own country so many people—in high and low places—who would give up our cherished formula, who would exchange it for ideologies and systems of unproved or questionable merit.

There are among us men and women who would have us discard our system for some form of statism. They point to Russia and say we should imitate her system. Little do they realize that Russia, while operating under the title

of a communistic state, daily is employing more and more of the devices of the capitalistic system in order to lift the still woefully low standard of living in Russia to a higher plane.

There are others in the United States who say we should follow the lead of England—we should turn "left" as England has done. Little do they realize that England has not turned "left" in any marked degree. Her new Labor Government is bent upon nationalizing coal mining and some other activities, but this is because coal mines had become so inefficient that all other means of rehabilitating them were impractical. The Labor Government now is trying to encourage private enterprise. It is not turning leftish; it is driven by desperation to make its economy work more smoothly.

Hope of Postwar World

Instead of trying to ape England or Russia, we should be trying to improve our own system, which has worked so well and which in World War II enabled us to arm the forces of the Allied Nations. This system is the hope of the postwar world.

If we, as citizens, will fight for the preservation of this system, our nation may be able to lead the weary world back to a condition of lasting peace, stability and a higher standard of living. If we fail to protect it from the attacks of its enemies, if we discard it for an inferior system or if we lose it by default or negligence, then we will forfeit our chance for leadership in the postwar world.



Combination car card and outdoor poster now being used by Boston Consolidated Gas Company. Shown above is car card. When used as poster the panel at the extreme right is omitted and company name only is retained. The design by Gerald Higgins, advertising manager

Selling the Difference

Inherent characteristics of gas water heating provide many competitive advantages but promotion is necessary to sell equipment

BY G. M. ROHDE, JR.

Rund Manufacturing Co.,
Pittsburgh, Pa.

WHEN you change your product from a luxury to a necessity, you insure it against the fate that befalls luxuries when economic conditions change for the worse. When such a product becomes a necessity in the minds of the users, those users will give up other things and stand hours in long lines if necessary to get it. Our problem is to do such a selling job with automatic gas water heating that will convert it from a luxury in the minds of people to a necessity.

The water heating users fall into two categories. Number 1, and unfortunately the biggest, is the class of people who thinks "automatic gas water heating service is all right but" or "as a matter of fact it's a wonderful thing to have if you have plenty of money to spend." This group throws it out, resorts to furnace coils, bucket a day, or a number of so-called free water heating devices when business slumps a little bit.

Many Sold on Gas Heating

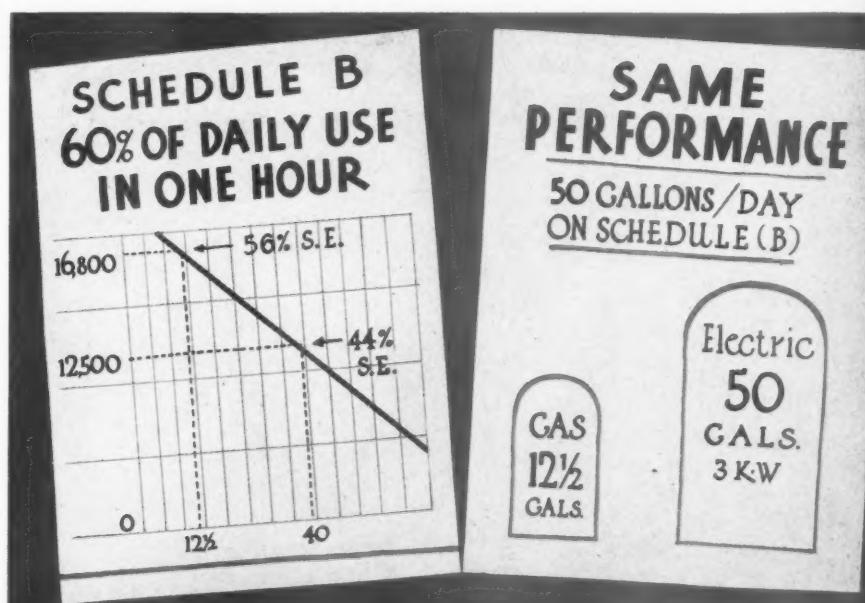
Group 2 is the group who have sold themselves and proved to their own satisfaction the real value of automatic gas water heating service. They have integrated it into their habit of living to the extent that they would rather give up a pack of cigarettes per day or a number of other things than automatic gas water heating service. I am sure that all of you have heard some housewife say "take my rugs, my radio, yes, even my refrigerator, but don't take my water heater." Our job is to convert more users from Group 1 to Group 2.

As far as Group 1 is concerned, the gas water heater manufacturers will continue to make and gas companies will

continue to sell all sorts, sizes and shapes of water heaters for this "O.P.A." market. I call them "O.P.A." because they like rationing of hot water. They want carefree hot water service but only to the point where it will give

about any idea you want to just as long as you believe in it yourself and tell the story in an enthusiastic manner.

Before the war my own company designed and built an automatic gas water heater for the United States Housing Authority. U.S.H.A. wanted a heater to serve a family on the basis of 40 gallons of hot water per day which amount, they reasoned, was enough to keep the average family clean. They wanted the heater designed to prevent using more hot water than had been budgeted, since the government in most cases paid the gas bill. They wanted the heater to give a higher service efficiency than the 40%



Data from A. G. A. bulletin showing service efficiencies of 12½-gallon and 40-gallon gas water heaters and comparable electric heater performance

them just enough hot water to keep them clean. They want guards placed on heaters that will prevent them from buying more hot water than they can afford as established in their minds.

There are more ideas among water heater manufacturers and gas companies on what kind of a water heater is best suited for this job than Heinz has pickles. Some believe slow recovery heaters are the answer, some say dual burners and others say small tanks and relative quick recovery. Each of these methods has numerous cases to prove the point. As a matter of fact it resolves itself into the fact that you can sell

they were getting from the cheap water heater based on 40 gallons a day. According to the National Bureau of Standards the heater we built for them gave 62.9% service efficiency on a 40-gallon day.

Thousands and thousands of these small heaters were installed in housing projects throughout the country and the experience has been enthusiastically excellent to the point, that, had we not a thorough understanding of the whole water heating problem, we might go around the country yelling we had found the missing link and now all of the water heating problems were solved.

Address before Mid-Winter Sales Conference of the Pennsylvania Gas Association, Philadelphia, Pa., February 1, 1946.

A. G. A. Bulletin 9, "Fundamentals of Domestic Gas Water Heating," treats this subject very well and gives a variety of tank capacities and inputs that will meet these minimum hot water demands in the most efficient manner. Any one who has not studied the chapter on "Service Efficiency" should do so. For instance it shows that, based on using 40.2 gal./day with an 8,000 B.t.u. input, 30-gallon tank service efficiency can be as low as 36.3%.

Figure 56 on Page 165 of that A. G. A. bulletin shows that, for a 50 gallons' per day use of hot water on the tough schedule B draw wherein

heating service (50 gallons a day) equal to a 50-gallon electric having a minimum of 3 K.W. (11,000 B.t.u.) heating element is something the gas man should not overlook. In the interest of economy of gas bill for "O.P.A." customers Bulletin 9 has this to say: "However, a complete analysis of the problem indicates that an entirely separate field exists for increasing service efficiencies other than improvement of thermal efficiency or standby loss characteristics of heaters. That field is the more accurate sizing of automatic storage heaters to fit given service requirements. Unquestionably, many such heat-

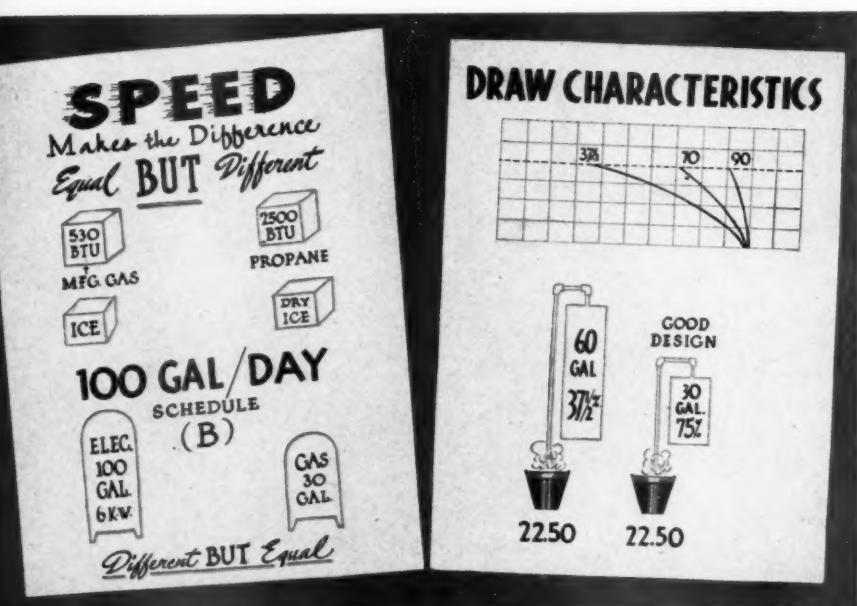
efficiency or standby loss characteristics over contemporary levels."

So much for Group 1; now let's turn our attention to Group 2 and see what can be developed in the way of facts and figures to prove that there is a difference between high quality, full service water heaters that would make automatic gas water heating a necessity instead of a luxury if these facts were known to the customers.

Gas has an inherent characteristic—**SPEED**—which we have never fully exploited. Competitive fuels have had a tough time to speed up their recoveries and, therefore, they have exerted every effort to make people believe tank capacity indicates water heating ability whereas tank capacity is only one factor. Over-all size and cubical content doesn't always mean performance. For instance, a cubic foot of 530 B.t.u. manufactured gas is the same size as a cubic foot of 2500 B.t.u. propane gas, but what a difference in heating value. A cubic foot of ice is the same size as a cubic foot of dry ice but what a difference in performance. Water heating ability or service is a product of B.t.u./Hr. input and tank capacity. If architect, builder, and public knew this they would specify and buy water heaters on a daily delivery ability, instead of tank size and gas definitely would have the advantage over competitors.

Lower Cost Than Competitors

Automatic gas water heaters bearing the A. G. A. approval seal have a daily heat quota or **G** on which their performance is based. The daily hot water delivery ability based on the A. G. A. Bulletin 9 chart shows some interesting comparisons. For instance, in building a new home, suppose the owner installed an automatic Westinghouse laundry machine and an automatic electric dishwasher in addition to the other hot water fixtures. Let's figure the hot water load at 100 gallons per day on Schedule B (60 gallons in one hour). According to A. G. A., a 30-gallon gas water heater with a minimum of 32,500 B.t.u. input would do the job. To render a comparable service, an electric water heater would require at least a 6 K.W. heating element (21,500 B.t.u.) in a 100-gallon storage tank. Coal or furnace coils, oil, indirect are not even considered for this job, because according to a laundry machine service manual, "Auxiliary systems such as furnace coil, solar or other



Drawing on left shows differences in heating value which makes a 30-gal. gas heater equal in performance to a 100-gal. electric heater; right, illustrates importance of draw characteristics

60% of the 50 gallons is drawn in one hour, a 12½ gallon tank with a 16,800 B.t.u. input will do this job. To do the same job but lowering the input to 12,500 B.t.u. would require increasing the tank capacity to 40 gallons. According to A. G. A. the service efficiency of the 40-gallon heater would be 44% whereas with the 12½-gallon heater it would be 56%. From this data it becomes quite obvious that choosing to do this job with the smaller heater enables the customer to buy a better quality water heater at no increase in initial cost.

This data which proves that a small gas water heater can render a water

heater are installed and producing hot water at over-all heater efficiencies of less than 40%, neglecting piping losses and gradual reduction in heater efficiency over a period of time due to liming, etc. The same service in most instances could be delivered with overall heater efficiencies well above 50% by storage water heaters having the same thermal efficiency and standby loss characteristics but smaller capacities. Such a difference, if it can be widely effected, would probably accomplish more in the general improvement of economy of gas hot water service than could any reasonable advance in thermal

indirect methods are seasonal and otherwise frequently undependable and cannot be considered satisfactory."

By selling this difference we could give a super quality water heater at a much lower cost than our competitors thus insuring our load and make it a necessity rather than a luxury.

Another point of difference to sell is draw characteristics—A. G. A. Bulletin No. 12, Page 15, Figure 4 shows that in the average gas water heater only 37½% of the capacity of the tank can be drawn before the temperature starts to drop due to mixing. These draw characteristics are no better or worse than the coal or oil heaters and they cause all kinds of trouble in an automatic electric laundry machine and automatic electric dishwasher because these machines demand a constant temperature to make them operate at top efficiency and produce whiter clothes and cleaner dishes. Even the A. G. A. tentative minimum draw characteristics are not so hot when we know it is easy to get 70% draw before there is a break in temperature and draws up to 90% before a break occurs are possible.

This is a real point of difference to sell to your customer. A well-designed 30-gallon automatic gas water heater with good draw characteristics will deliver as much hot water as a 60-gallon coal or oil heater or minimum A. G. A. heater before the temperature starts to drop. This will really make prospects see the quality water heater as an absolute necessity.

Service Efficiency

Another point of difference is service efficiency. The A. G. A. 1500G is merely a minimum and, as I quoted from Bulletin 9, results in some very low service efficiency (—40%) when the daily use falls below the daily heat quota. 1500G means 1500 B.t.u./Gal. 90° rise when heater is delivering daily heat quota. Gas water heaters can be built to meet a 1250G without imposing a hardship on any manufacturer.

This difference enables you to sell full hot water service at a lower cost per gallon than customers are now getting from their "O.P.A." service type of water heater. That's just like buying an automobile with a greater horsepower engine that gives you more miles per gallon instead of less. Impossible you say—no, it isn't! All you have to do is

ask for it and you'll get it. That's a real point to show your customer and once you convince him he'll see the necessity of having a full service water heater.

Another point of difference is "Temperature Selection" at the customer's convenience. Controls that look and operate like range and refrigerator controls that the homemaker is so familiar with, instead of the cumbersome adjustments that even the gas man is reluctant to touch. Here the flexibility of gas really shows its stuff. If the homemaker thinks that turning the temperature down to 110° F. at night saves money, bless her soul, let's make it easy for her to do it. If she thinks 120° F. is boiling and she's afraid of any higher temperature, let her have her 120° F. and tell her only with gas that responds to the instant touch of the control can this be made possible—coal and oil can't do it.

If on the other hand she's read the V.P.I. booklet which proves "The Hotter the Water the Whiter the Wash" and that gas costs less than soap to accomplish the 25% extra whiteness, quit telling her she's a child and the benevolent gas industry won't let her have it because she might burn her fingers. If she wants it, let her have it. That's her prerogative. It's our business to render a service and give her the kind of service she demands.

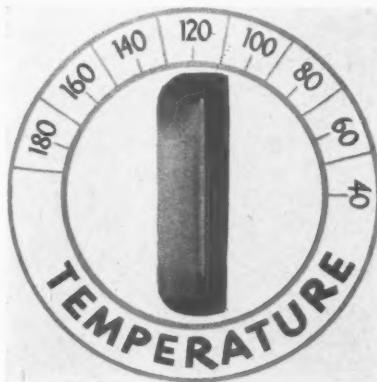
Let's sell the adjustable control together with the flexibility and instantaneousness of gas that makes these adjustments mean what they say, and you will really raise Cain with the "bucket-a-day" furnace coil and indirect heaters. Those heaters say to the homemaker "WE don't know what the temperature is going to be today, it all depends on the weather. It may be 90° F. or 190° F., but take it and like it."

Rust-Free Water Service

Last but not least I want to bring up a real point of difference that has a tremendous advantage for gas, but one that the whole industry has feared to talk about because we might offend our coal, oil and electric competitors and make it practically impossible for them to compete with us. I mean Rust-Free hot water service. Certainly with the new war developments in various non-ferrous metals and various methods of making tanks rust-proof there need no longer be any hesitancy on the part of the gas company to tell the public that

this is a must if rust-free hot water service is to be assured.

The electric boys and "bucket-a-day" adherents shy away from the non-ferrous metal story because their big tanks in non-ferrous metal throw them all out of line price-wise compared to a gas water heater made of non-ferrous metal for a comparable job. The electric boys use the old bromide that electricity puts magic on the tank and keeps it from rusting. Go to Pittsburgh, Altoona, Pottsville, and look in an electric water heater that's been in service for a short time to dispel that hooey. Here again, the inherent characteristic of gas—SPEED—makes it possible for the gas industry, through advertising and sales promotion, particularly through the home service department, to preach this



Flexibility of gas makes simple, easy-to-operate temperature controls an important selling point

difference day in and day out until the public uses it as a buying guide when selecting a water heater. By doing this job right and doing it consistently, we will convert more users to Group 2 where we can be assured they will become enthusiastic users of the necessity of full automatic gas water heating service.

The hot water requirements of the automatic laundry machine and the electric dishwasher demand a new kind of automatic gas water heater. These electric appliances open a new era that does more to make obsolete the furnace coil, "bucket-a-day" and indirect heaters than anything we have done in the past. Whether or not the gas industry will take advantage of this opportunity depends upon the attitude it takes regarding the hot water requirements of these machines. If the industry says, "Gas can't heat (Continued on page 138)

Servel's New Freedom Kitchen

Introducing a complete all-gas kitchen with exclusive merchandising features supported by a four-area promotion plan adaptable to small and large utilities



R. J. Canniff

SPECIFIC details on the kitchen program of Servel, Inc., were announced at a recent meeting of the Pennsylvania Gas Association, by R. J. Canniff, advertising and sales promotion manager for Servel. Before unveiling the New Freedom Gas Kitchen which was displayed and demonstrated at this meeting, Mr. Canniff had felt it a definite need of the gas industry to have specifically designed New Freedom Gas kitchens from a single source.

"The 'CP' range and Servel refrigerator," Mr. Canniff said, "become even more popular when they are integrated in a complete kitchen with supplemental cabinets; but with a loose system of coordination, gas company executives are faced with the problem of assembling materials from five or six different sources in separate fields before they can advertise, display, sell and install the complete gas kitchen."

Single Source of Supply

"Thus there are three excellent reasons for the Servel-designed New Freedom Gas Kitchen. They are (1) to develop a line that would be exclusively gas with merchandisable features, (2) to present a united front in the 'battle of the fuels' through cooperation with all manufacturers of 'CP' ranges, and (3) and perhaps the most important reason from the customer's point of view is to furnish that customer with a single source of supply for her entire kitchen."

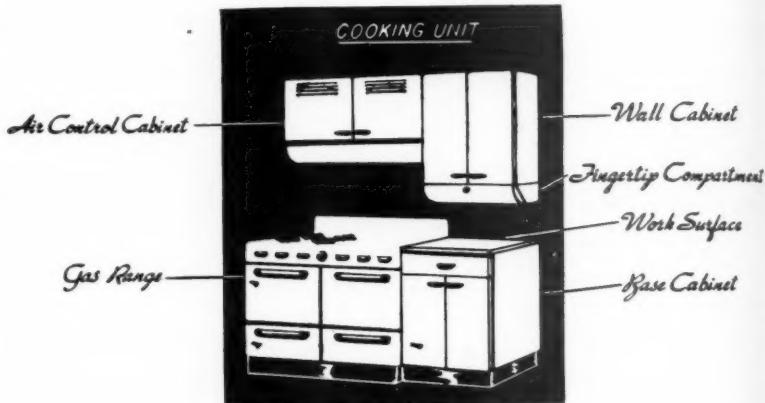
In introducing the kitchen which was on display at the meeting, Mr. Canniff emphasized that, as in time past, Servel would continue the selling philosophy of exclusive points of difference. In the designs thus far produced, the new line offers three separate units to supplement

basic appliances and make the kitchen an easier and more comfortable place in which to work. Three exclusive features shown were the air control, dry storage, and finger tip cabinets.

Mounted immediately over the open burners of the range, the air control cabinet removes greasy vapors, odors, and excess heat, and provides new freedom in the postwar kitchen. This air control cabinet was devised in the engineering laboratories at Servel and provides in-

offers shelf area at the most usable height and location to provide space to store small tins, utensils, and boxes which are frequently lost in the larger areas of other shelves.

In addition to the exclusive features outlined, the line includes standard base and wall cabinets in widths from 15 to 30 inches, plus sinks from 42 to 96 inches in width. It provides a flexibility of design which allows the tailor-made quality of custom-built kitchens to be



stant air control at the source of heat, odors and vapors.

The second feature demonstrated is a dry storage cabinet which is mounted immediately over the gas refrigerator. This cabinet provides humidity-free storage space for foods requiring a dry atmosphere such as crackers, cookies, salt and cereals. In the demonstration it was pointed out that the new dry storage cabinet, operating in conjunction with the refrigerator, centralizes food storage and renders a new type of food preservation service in that dry foods stay fresh and crisp for extended periods.

The other new feature is a finger-tip cabinet mounted above working areas at the bottom of wall cabinets. This finger-tip cabinet has a "bin-type" door and

offered at mass production prices.

The competitive features in the new line include insulated doors, rubber shock absorbers, roller doors capable of carrying 35 pounds, Newtone finish, movable shelves, distinctive hardware, and accessories such as cup hooks, bread and cake boxes.

After the demonstration of the new line, the company's Four-Area Plan of merchandising kitchens was explained. "This new merchandising plan," Mr. Canniff pointed out, "is adaptable for both large and small utilities and suggests all the merchandising phases necessary for successful promotion." In explaining the plan, Mr. Canniff divided the complete sale into four areas, the first of which was advertising and pro-

motion. This area includes anything that is done to create a prospect, whether it be newspaper advertising, direct mail, car cards, or personal contact, a function which is well understood by gas utility companies and can be administered by present staffs.

Particular emphasis was laid on Area 2 which concerns the kitchen planning consultant's service. This area includes any help that the gas utility gives the prospect in the physical arrangement of appliances and cabinets, in the selection and use of color, in the selection of kitchen building materials, and in the offering of unusual ideas to make the kitchen more livable. This area was expanded at the time of presentation because, of the four areas of merchandising, it is the one most likely to be new to many companies. In order to facilitate the training of personnel for this work, Servel has established and is operating



is included as an active partner in planning, and under the guidance of a trained consultant, she plans her own kitchen to best suit the needs of her own individual family. The fourth step after arrangement is personalizing the kitchen, which Miss Seaton called "putting the frosting on the cake." It involves such things as selecting the color scheme, ma-

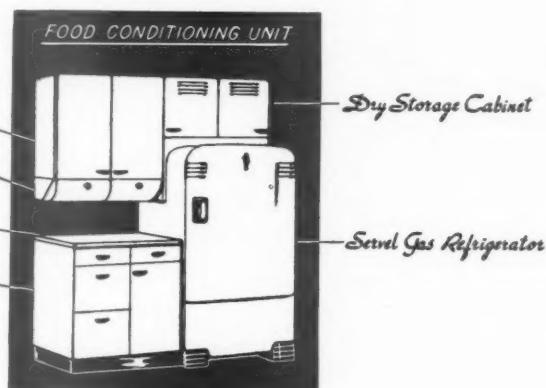
The fourth area is installation which includes preparation of working drawings, estimating costs and actually installing the Servel New Freedom Gas Kitchen.

In summing up the merchandising plan, Mr. Canniff highlighted the services rendered by the manufacturer to gas utility companies to make the program a success. Servel will offer considerable advertising and promotion help to make the first area a success. In addition, in Area 2 the company will train at clinics in Evansville the personnel selected to function as kitchen-planning consultants. As before the war, it will offer sales training aids based on the Servel Seminar, and the company is prepared to train the personnel who will install the complete New Freedom Gas Kitchen.

In showing the value of the Kitchen Consultant's Service in the merchandising of New Freedom Gas Kitchens, a demonstration was also made of Servel's New Freedom Gas Kitchen Planning Center, a modernly designed display piece which, in conjunction with the demonstration kitchen on the gas company sales floor, attracts the attention of prospects and provides a complete working area for the consultant.

In closing his presentation of Servel's new kitchen program, Mr. Canniff pointed out that labor unrest and material shortages made it impossible to exactly predict deliveries of completed kitchens to the gas industry.

"I want to emphasize at this time," Mr. Canniff concluded, "that the Servel-designed New Freedom Gas Kitchen and the Kitchen Planning Center, which we are showing, while engineering models, are representative of a completely designed program of manufacturing and merchandising which will be made available to the gas industry to help score a complete victory in the days of stiff competition which lie ahead."



a series of four-day kitchen planning schools which are being carried out at the factory in Evansville.

As explained at the meeting by Gay Seaton, director of kitchen planning for Servel, the consultant's work breaks down into five very definite steps. The first of these is screening of interest in which "suspects" are divided from "prospects." The second step is in gathering information from which the kitchen consultant can aid the prospect in planning her own kitchen to meet the needs of family living. The third step is in arranging the kitchen with proper coordination of work centers to provide the greatest convenience and efficiency possible in that kitchen.

In steps two and three the customer

aterials and colors for floor covering, work tops, curtains, and even pottery.

"This step might not be considered strictly necessary in the sale of a package kitchen," Miss Seaton pointed out, "but by retaining the customer's hand and offering a very complete service, she is not sent all over town to hunt these extra things, which exposes her to competitors. After the finishing touches have been added to the kitchen, which the consultant and Mrs. Prospect have worked out in model form, it is an easy step from this to the fifth step which is 'slanting for sales.'"

The two other areas of merchandising are sales, which will be carried out in much the same manner as in the successful pre-war selling of gas appliances.

Efficiency of London's Gas System

Foresight and planning made possible maintenance of gas supply in Britain during the wartime air raid conditions

BY STIRLING EVERARD

Manager, London Regional Gas Center

BRITAIN'S Minister of Supply and of Aircraft Production, the Right Hon. J. Wilmot, M.P., has spoken recently of the foresight with which the British gas industry prepared to meet the task of maintaining the supply under air raid conditions in World War II. The story of these preparations and of their success in operation is exemplified in the work in the London area of the London Regional Gas Center.

This organization was formed on a voluntary basis by the gas companies supplying Greater London. These companies early in 1939 set up a committee to organize mutual aid between the members, for it was clear that a concentrated attack on any given area would in all probability overwhelm the resources of a single company, while in order speedily to get the necessary help from elsewhere would require a prearranged method of procedure. In the case of gas supply speed of repair is essential.

A liaison officer between the companies was appointed, and the nucleus of a central control room organization formed. The resources of each area were recorded, and maps of all the distribution systems prepared and particular attention paid to communications. Plans were prepared for the interlinking of



After the bombs the gas company's repair squads go into action. The gas main is opened and "bagged off." The picture shows two bags which have been pumped up outside the main just to show the approximate size

the gas distribution systems to facilitate bulk supply in case of a break-down in production in any area. Work was put in hand, and continued well into the war years, both in strengthening the interconnections and valving the vital areas for quick control of the flow of gas. The valving was to be of greatest importance, for on the occasion of London's City Fire in December 1940 caused by an extensive air-raid it was possible completely to isolate the affected area, diverting the supply of gas from the large works in East London to by-pass the city to the north. Through supply to the west of London was not interrupted.

The control room was fully manned from two days before the outbreak of

World War II in 1939 until April 1943, and at no time during the subsequent five and a half years was there any break in continuity by day or night.

When heavy raiding began in September 1940 the London gas companies were immediate sufferers, severe damage being received at some of the most important works, and many mains, including the vital transmission mains—the arteries of the system—being broken. Inevitably certain areas suffered a temporary breakdown of supply, but the mutual aid arrangements worked very well and repair parties from the unaffected out suburbs and surrounding country towns were soon at work assisting the inner London men on restoring the distribution systems. The Gas

Center control room was responsible for all movements of men between companies, and developed a technique akin to that of Britain's National Fire Service in calling for reserves from untouched areas.

Damage on works was severe—in one company alone retort houses were hit on 77 occasions, holders damaged or destroyed on 114. Nevertheless production continued even during the heaviest raids, and it must be borne in mind that not only was there the ever-present risk of damage, but also that due to the black-out regulations conditions were very much more onerous for the staff than in normal times, particularly in the retort houses.

"Grid" Transmission System

The big inner London gas companies operate in each case several works linked on a "grid" transmission system, so that the effect of a temporary cessation of supply at one works could be minimized; moreover gas could be obtained in bulk through the interconnecting mains. Nevertheless, when a large works was put out of action, the result was necessarily felt throughout a wide area, for it was rarely possible to step up production elsewhere adequately to make up for the lost production. This and the breakage of transmission mains necessarily led to a cessation of supply or a serious reduction in pressure for limited periods in certain districts.

The Gas Center fulfilled certain functions in this situation. It advised Britain's Ministry of Food so that communal feeding could be arranged without delay in the affected area. It advised the Ministries of Supply and Aircraft Production so that factory programs which depended upon gas could be modified until the supply was restored. It made regular daily reports of the position to the London Regional authorities. It had the duty of ensuring that no time was wasted due to lack of men or materials which could be obtained by an approach to any authority competent to supply them. In effect it stood as the representative of the public and civil authorities to the gas companies, of the gas companies to the public and to the civil authorities, a dual role which it played with success.

The companies had the primary responsibility of supply to their consumers, and in the case of factories on priority

work arrangements were made to equip them with plant capable of drawing off a sufficient supply of gas even at very low pressures. This was, of course, a provision which had to be limited only to essential work. In many cases, also, the companies advised factory owners on the installation of producer gas plant as an alternative should the gas supply fail.

Any company could appeal to the Center at any time for help of any nature, and much work was done on behalf of the members in obtaining men, materials and equipment, and in representing the views and requirements of the companies to the government authorities. In the case of war supplies such as respirators and steel helmets the Center arranged to buy centrally for its members when this was necessary.

The Center was called upon to send assistance outside London on more than one occasion, the biggest of such assignments being the aid given to blitzed Coventry in 1940 and again in 1941. The request for such help was passed through the civil authorities of each region. At one time a number of London gas repair parties were on constant standby as flying squads to proceed outside the region in case of need.

One of the acute problems which arose in maintaining London's gas supply was due to the loss of storage capacity. Many gasholders were hit, and

some completely destroyed, with the result that the engineering staffs of the companies had to be prepared to meet fluctuation in demand by a much greater flexibility in output than is customary. In such cases the inter-connecting mains were found to be of value, for a neighboring company could sometimes assist in meeting a peak load.

The work of the production and distribution staffs, however, requires special mention, for they performed their duties often in circumstances of extreme danger. It would be invidious to cite individual cases from among the many winners of the George Medal and of other awards for gallantry on the works. These men had to deal with blazing gasholders, operating the control valves in scorching heat or plugging holes torn by bomb splinters; they had to deal with incendiaries which had fallen in benzol plants or on oil storage tanks; on the district repairs were carried on whatever the conditions, for burning gas mains had to be extinguished and trapped casualties protected from the risk of asphyxiation from broken service pipes.

Correction

IT was incorrectly stated in the February MONTHLY that Ralph H. Fry, general manager of the Bristol Gas Corporation, is a past president of the Pennsylvania Gas Association. He is a past P.G.A. director.



Wartime work of repair squads in London was often dangerous but the gas supply was maintained. This picture shows a squad in action beneath the pipes and cables.

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A. G. A. President E. J. Boothby (center) with Harry D. Lehman of Philadelphia and Eugene D. Milener, general research coordinator, discuss research policies between sessions at Cleveland



E. C. Adams, president, Adams Bros. Mfg. Co., chairman, Technical Advisory Group for Direct Space Heating Research, introducing the subject of venting



Keith T. Davis, chief engineer, Bryant Heater Co., chairman, Advisory Group for Central Space Heating Research, discussing corrosion from products of combustion

Domestic Gas Research Is Theme of First National Postwar Technical Conference

INTEREST in current domestic gas research highlighted the Technical Conference held in Cleveland on February 18 and 19 under the sponsorship of the Committee on Domestic Gas Research, American Gas Association, of which F. M. Banks is chairman.

General sessions were held each morning. The afternoons were devoted to panel sessions for gas cooking research, burner research, water heating research and house heating research. All were well-attended, manufacturers and engineers of the industry participating in the discussions and analyzing technical aspects of various research endeavors.

The conference was the first national gathering of those interested in design, manufacture and utilization of domestic gas-burning equipment since 1944, war transportation regulations limiting last year's activities to local regional conferences. Luncheon speakers included E. J. Boothby, president, American Gas Association, and Lyle C. Harvey, presi-

dent, Gas Appliance Manufacturers Association.

Technical papers reviewing projects assigned to the American Gas Association Testing Laboratories were presented at conference general sessions by seven members of their staff. Addresses were made by Prof. C. F. Prutton, of Case School of Applied Science, C. E. Blome of Purdue University, and Keith T. Davis, chairman of the Technical Advisory Group for Central Gas Space Heating Research.

Laboratories' papers were devoted to various studies recently completed and to phases of projects under way at the present time. Gas cooking research was covered by three papers dealing with heat absorption by utensils, oven heat distribution and application of radiant materials to broiler oven. They were authored by Joan Huck, Frank E. Hodgdon and Milton Zare. New developments in gas burner research were outlined by Herbert Luoma and

Earl J. Weber who spoke on characteristics of totally aerated burners and atmospheric burner injection. Water heating research dealing with burners and pilots was covered by Walter B. Kirk. A joint paper on current central heating research by Dr. Robert C. Weast and James A. Morse dealt with heat transfer studies and gas-operated summer-winter hook-ups.

Prof. Prutton discussed electrolytic corrosion in his talk at the general session. Mr. Blome spoke on venting problems at a general session and also addressed the second day's luncheon meeting on humidity and condensation problems in homes. Mr. Davis discussed research on corrosion now under way at Battelle Memorial Institute.

Initial distribution of three new research bulletins recently published by the Laboratories was made at the conference. They are as follows:

No. 38—Fundamental Data for Design of Totally Aerated Atmospheric Gas Burners

No. 39—Fundamentals of Heat Absorption by Utensils in Gas Range Ovens

No. 40—A Study of Various Methods of Kitchen Ventilation

Individual panel sessions were led by the chairmen of the several Technical Advisory Groups. It was the first conference for the newly formed group on burners, controls and accessories headed by Dr. W. R. Hainsworth. Technical Advisory Group chairmen in addition to Dr. Hainsworth and Mr. Davis are L. R. Mendelson, water heating; C. M. Mayer, cooking; and E. C. Adams, direct space heating.

The conference was held at the Hotel Statler. Many attending visited the A. G. A. Laboratories while in Cleveland.

Bryant Develops New Gum Filter

THE development of a streamlined vapor phase gum filter is announced by the Bryant Heater Company, Cleveland.

Available for application to stoves, water heaters, boilers and other domestic gas heating equipment in manufactured gas areas where gum must be removed from the line, the filter is efficient but mechanically simple. Only five parts are used in the clean-cut filter assembly, which has the approval of the American Gas Association.

A. G. A. Granted Use of Phillips Trademark

FOR some time the American Gas Association has unintentionally been using in its advertising and promotional work "The Blue Flame" which has been trademarked by Phillips Petroleum Company and used for many years as the name of Phillips' publication "The Blue Flame," sent to its Phillips dealer organization. Phillips Petroleum Company has now given the American Gas Association and its members permission to use Phillips' trademark "The Blue Flame" in its advertising and promotional activities.

Advancing the Art of Broiling

Test data on domestic gas range broilers with and without the use of radiant materials, including efforts to establish a measure of "quality" for broiled products



Milton Zare

RECENT years have witnessed vast improvements in the art of cooking which have reached and benefited practically every household in this country. This becomes immediately apparent by comparison of recently published recipes for various dishes with those available only fifteen years ago. It is more evident from day to day, that obtainment of satisfactory baking results has become less and less a matter of individual skill in applying rule of thumb methods.

Role of Gas Range

Modern recipes are much more exacting with respect to amounts of ingredients, temperature and baking time. Nevertheless, these more specific cooking instructions provide greater assurance to the housewife of satisfactory and acceptable baked products. In this advancement the American gas industry may take great pride knowing the dominant role which development of the modern domestic gas range has played in raising the art of cooking to its present high standard. This is primarily because refinements and improvements in range design and performance have made well standardized recipes possible.

One of the important changes currently taking place in our daily diets is the popular swing from "fried" to "broiled" foods. While it is not always feasible to determine popular acceptance of new ideas, particularly when it comes to methods of food preparation, the increased number of broiled meat and fish items on restaurant menus and especially the increased customer de-

BY MILTON ZARE

Research Supervisor, American Gas Association Testing Laboratories

mand for separate high broilers on newly purchased domestic gas ranges is ample evidence of this trend.

Broiling may be defined as cooking by direct exposure to radiant heat. It is credited as being a very healthful method of cooking resulting in a product of superior flavor and appearance. Moreover, it is generally accepted as a "fast" cooking process for which reason it is rapidly gaining wide acceptance.

Broiler Design Studies

By the definition given above a broiler consists primarily of a source of radiant heat together with convenient means by which foods may be subjected to the action of this heat. Going one step further, it must be fast and provide a sufficiently large effective broiling area in addition to giving safe, efficient performance. To determine which materials afford the best source of heat for broiling and how these materials may be employed to best advantage has been the main objective of two broiler design studies currently underway at the American Gas Association Testing Laboratories. These are entitled "Research in Fundamentals in Use of Radiant Materials in Gas Range Broilers" and "Research in the Fundamentals of Design Features Affecting Broiler Performance." It is the purpose of this paper to present a preliminary report on results obtained to date as well as trends indicated by phases of these investigations yet to be completed.

It is recognized that application of radiant materials to broiler burners results in improved broiler time-temperature characteristics and heat distribution areas. In Fig. 1, for example, is shown the effect of mass of clay radiants on the time required to preheat a broiler to a desired temperature. According to cur-

rent American Standard tests for broilers, preheating time is considered as that required to raise the temperature on a broiler pan from a room temperature of 70° F. to 530° F. above room temperature. Whereas it required 19.25 minutes to reach the desired temperature without radiants, the time required with radiants weighing 0.33 lbs. was decreased to 15.3 minutes. This provided an increase in speed of 20.5 per cent and a corresponding reduction in gas consumption. With radiants weighing 4.2 lbs. the preheating time required was 17.6 minutes or an increase in speed of 8.6 per cent. Thus it would appear that a point may be reached where no advantage in speed may be realized. However, within the range of weights used as shown in Fig. 1 it may be concluded that use of radiants in conjunction with the broiler burner materially reduces preheating time. This curve also indicates that preheating time is reduced as weight of radiant material is decreased.

Effective Broiler Area

The corresponding increase in effective broiling area obtained with clay radiants as compared with the burner without radiants is shown in Fig. 2. The effective broiling area depicted herein is defined as that area in which broiling temperatures of 350° to 600° F. were obtained experimentally within the first 10 minutes after the gas is ignited. It may readily be seen from this curve that all radiants provided a material increase in effective broiling area as compared with a burner without radiants. Those radiants lightest in weight produced the maximum increase during this period of time.

The effect of weight of clay radiants on the gas input rate required to maintain a broiler at 530° F. above room temperature is illustrated in Fig. 3. It might be considered from this curve that an increase in the mass of the radiants would improve broiling performance with a minimum gas consumption.

Presented at A. G. A. Technical Conference on Domestic Gas Research, Cleveland, Ohio, February 18-19, 1946.

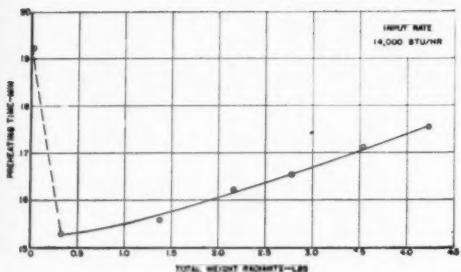


Fig. 1. Effect of weight of clay radiants on preheating time

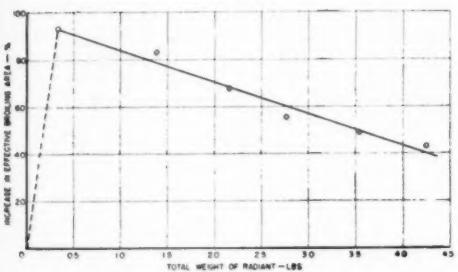


Fig. 2. Effect of weight of clay radiants on effective broiling area

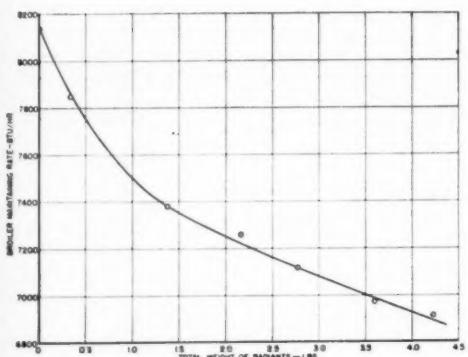


Fig. 3. Effect of weight of clay radiants on maintenance rate

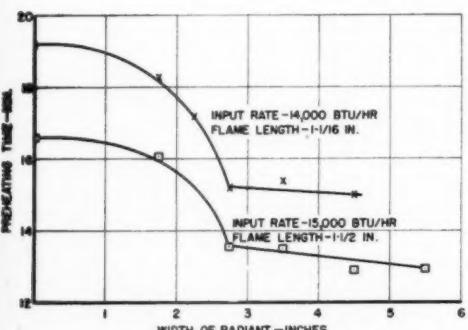


Fig. 4. Effect of width of clay radiants on preheating time

On the other hand it should be noted that the trend shown by this curve is in reverse to that indicated by the preceding graphs for preheating and effective broiling area. On further analysis it may be seen that 61 per cent of the total decrease in gas consumption within the limits indicated in Fig. 3 is realized with radiants weighing 1.4 lbs. Moreover, 92 per cent of the total increase in speed and 90 per cent of the effective broiling area may be realized with radiants of the same weight. Thus, a practical compromise may be made, in this instance using radiants of 1.4 lbs.

Radiants employed in the tests reported above were all of the same design and placed in the same position with respect to the burner. They consisted of ceramic plates with inverted cones projecting downward from the base and covering the area adjacent to the sides of the broiler burner. Weight was varied by modifying the thickness of the base, all other dimensions being unchanged. To determine the effect on broiler operating characteristics this dimension was varied. This was considered as the distance from the side of the burner to the side of the radiant adjacent to the broiler wall.

Figure 4 shows the effect of radiant width on preheating time obtained. It may be seen that as the width of radiants is increased a point is reached beyond which little additional speed may be realized. For gas input rates of 14,000 and 15,000 B.t.u. per hour, this width may be taken as 2.75 inches. It may be noted that practically the same limit in effective width was observed despite the increase in flame length obtained

at these rates. This effect is also very marked in the maintaining rates obtained as shown in Fig. 5 which leads to the conclusion that a minimum width of 2.75 inches is desired to gain a maximum increase in speed and minimum maintaining rate. This is further confirmed by its effect on the effective broiling area. As shown in Fig. 6, as the width of radiants is increased, the broiling area increases rapidly until a width of approximately 2.75 inches is reached. With greater widths there is practically no additional increase in broiling area.

No mention thus far has been made of metallic radiants, some of which have been successfully used on domestic gas ranges. In view of the fact it is not possible to secure as wide a variety of different types of metallic radiants as might be desirable for a comparative study, the investigation along these lines is limited. However, practically identical results are indicated for 10-mesh, 24-gage nichrome wire radiants as those obtained with the lightest weight clay radiants used in this study. They are further supported in studies of the broiling characteristics obtained with different burners.

Comparative tests were conducted to determine the effects of burner design with or without radiants. Results obtained with three contemporary burners are shown in Fig. 7. It may be seen that for all practical purposes, there is little difference in the preheating times obtained at various gas input rates between the bar and square-type burners. As a matter of fact, except for a slight tendency to converge at the higher input rates, practically parallel curves were

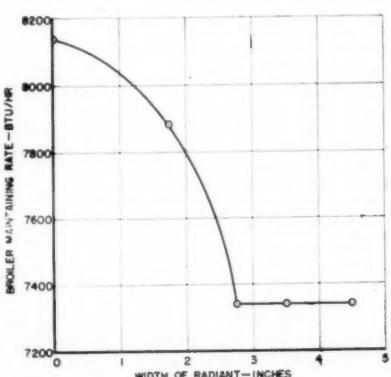


Fig. 5. Effect of width of clay radiants on broiler maintaining rate

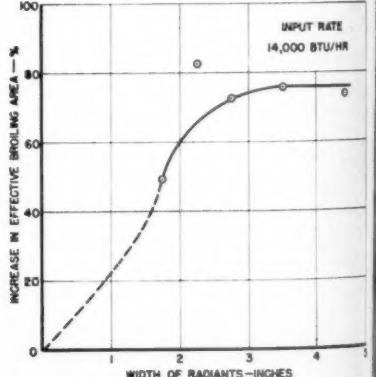


Fig. 6. Effect of width of clay radiants on effective broiling area

obtained for these burners equipped with either wire or light ceramic radiants.

The data for a heavy cast iron burner included in this figure were inserted for the purpose of comparison. This burner was designed for a commercial broiler rather than for a domestic gas range. In this instance speed was affected to a negligible extent by the use of radiants. Although not shown herein this also applies to its effective broiling area. Thus, the main advantage from the mass of both burner and radiants employed may be in obtaining a low maintaining rate for the commercial broiler for which this burner was designed.

Another important result with respect to burner design is illustrated in Fig. 8. In this series of tests two rectangular burners of the same design except for the number of ports were used with the same gas input rate. It would be expected that the heat pattern resulting from this difference in design might affect broiling characteristics. As shown in Fig. 8, practically identical preheating characteristics were obtained with both burners with and without radiants.

It should be pointed out that radiants cannot be used in conjunction with any broiler burner indiscriminately. Special attention must be given to placement of radiants with respect to burner ports from the standpoint of securing complete combustion. Moreover, attention must also be given to aeration and venting. Preliminary studies of these factors show, for example, that as soon

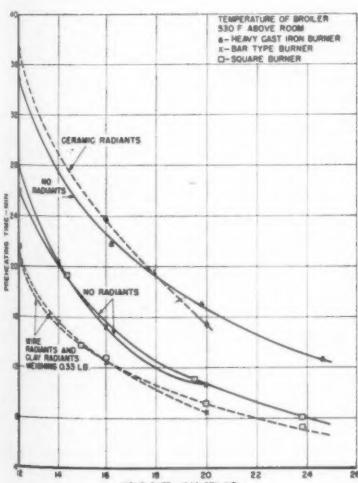


Fig. 7. Comparative results obtained with contemporary broiler burners

as radiants are used in conjunction with a burner, the normally curled burner flames straighten out and lengthen perceptibly. If radiants are placed too close to the burner ports flame impingement occurs with possible poor combustion characteristics. Use of radiants normally involves some degree of restriction to flow of products of combustion from the broiler. Special provisions to compensate for this added resistance to escape of flue products must therefore be incorporated in the design employed. These points represent important aspects of this broad investigation that should be of general interest, and will be covered in reports of this study.

Several comparative tests were conducted with ceramic radiants placed on a horizontal plane and also slanted 30 degrees both above and below this plane. Results are presented in Fig. 9. Compared to a burner with radiants in a horizontal plane, an upward slant nullifies some of the advantages gained from the use of radiants from the standpoint of speed of operation, while a downward one does not provide any additional advantage. As a matter of fact, with the radiants slanted downward, combustion characteristics became very critical. It may be concluded on the basis of these results that the optimum position of radiants is horizontal.

In an effort to improve methods for evaluating broiler operating characteristics, a special method was developed and successfully applied in this investigation for determining percentages of radiant heat and relative efficiencies of various broiler designs. Briefly, this procedure is based on the relative heat absorption of enclosed vessels of water, one finished with flat black surfaces to simulate a black body and a second with

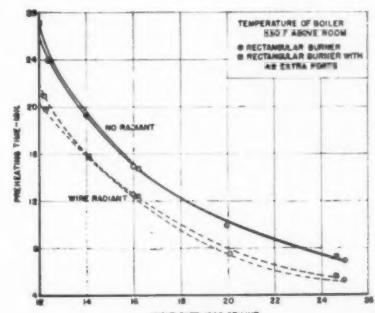


Fig. 8. Effect of total number of ports on preheating time of domestic gas range broiler

highly polished reflective surfaces. Since the shiny surface absorbs little radiant heat the difference in amount of heat absorbed was taken as an indication of radiant heat produced in the broiler. A sketch of one of these vessels is shown in Fig. 10.

Indicated relative efficiencies obtained

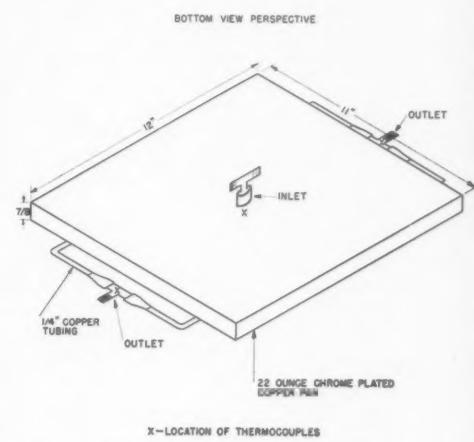


Fig. 10. Special efficiency vessel for determining radiant and convected heat from broiler burners

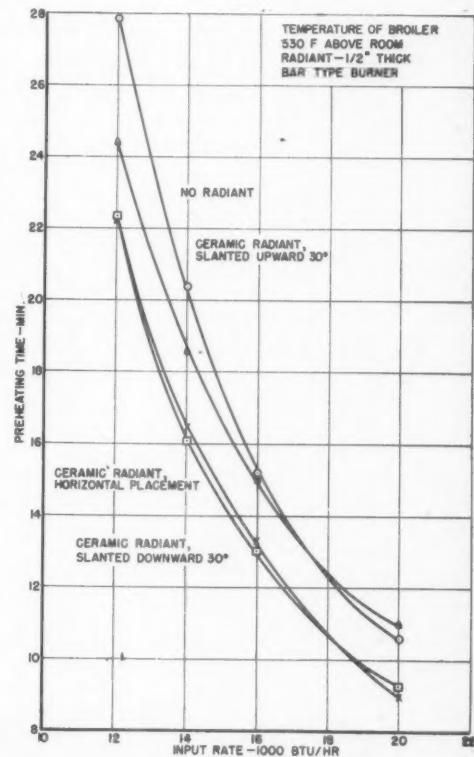


Fig. 9. Effect of angle of placement of radiants with respect to horizontal plane

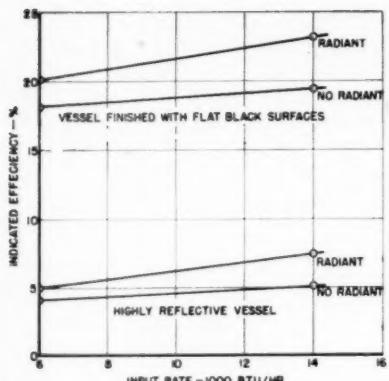


Fig. 11. Indicated efficiencies of broiler section obtained with special efficiency vessels

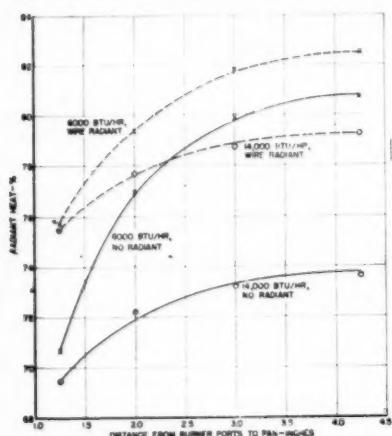


Fig. 12. Effect of space between broiler pan and burner ports on radiant heat content

by this procedure under these particular conditions are shown in Fig. 11. From these curves, it is evident that the vessel finished in flat black which approaches a black body absorbs approximately four times the amount of heat absorbed by the vessel with the highly polished surfaces. It is also significant that a higher percentage of heat is afforded with the use of radiants in conjunction with the broiler burner.

If this vessel was a true reflective body no difference should be indicated for the additional use of radiants inasmuch as only convected or conducted heat would be indicated. Similarly, a higher percentage of heat absorption should be expected with a perfect black body where all three types of heat should be absorbed. However, these tests afford comparative results which for the purpose of this investigation are useful in evaluating effects caused by various changes in broiler design.

As an example, the effect of varying the distance from the burner ports to the broiler pan is indicated in Fig. 12. It may be seen that as the space is increased from $1\frac{1}{4}$ to 4 inches the percentage of radiant heat increases. It is significant that these curves tend to become asymptotic or flatten out when a spacing of 3 to 4 inches is reached which would indicate that optimum spacing from the standpoint of maximum radiant heat available is approximately 4 in.

While there seems to be a simple and generally accepted definition for the broiling process, no such definition appears to have been established for the end results of this process. In the case of broiled meats the public generally thinks of steaks well browned on the outside without overcooking or drying of the interior of the meat. To complicate matters further, there is an accepted terminology developed for "rare," "medium" and "well done" steaks but with general disagreement as to what they really are. In other words, despite the use of these descriptive words, how a steak should be broiled is a matter of individual opinion.

In order to differentiate "quality" in a scientific manner rather than depend upon individual opinion, the problem was approached from the standpoint

that microscopic examination of cell structures of steaks might reveal physiological changes that take place when successive cuts of steaks from the same section are subjected to different treatment in the course of broiling process.

As may be seen from Fig. 13 which shows microsections taken from approximately the same location in raw, rare, medium and well done steaks there is a marked differentiation between meat cells resulting from time of exposure. There is a definite shrinking (dehydration) which may be noted in the decrease in size of the cells. The intercellular spaces become more defined at first and then decrease as the total mass apparently dehydrates. While these microphotographs show approximately the same horizontal plane below the exposed surface of each steak, it was also possible to discern different degrees of dehydration from the exposed surface toward the center. It therefore appears likely that this procedure may lend itself to measurement of depth of heat penetration, which may be of interest with respect to results afforded by different types of flames or radiant materials used in conjunction with broiler burners.

Fig. 14 presents microphotographs of "well done" meat sections prepared with a yellow (Continued on page 138)

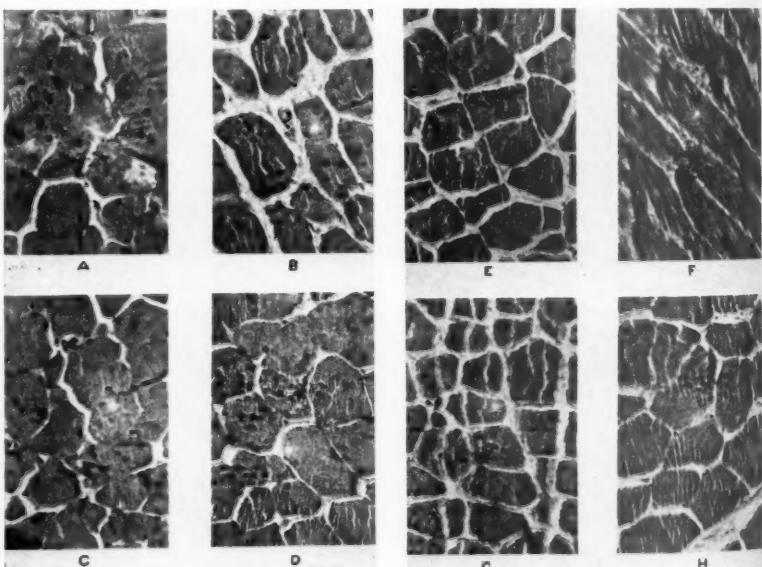


Fig. 13. Microphotographs of steaks of different degrees of "doneness." a. Raw, b. Rare, c. Medium, d. Well done

Fig. 14. Microphotographs of well-done steaks prepared with yellow flame burner, different radiant materials and low temperature broiler. e. Yellow flame burner, f. Ceramic radiants, g. Nichrome wire, h. Low temperature oven

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THLY



Demonstration platform of The Brooklyn Union Gas Company. Note overhead mirror to picture operation

Organizing for Home Service

Factors that affect the organization and operation of an efficient home service department, including information on objectives, personnel, activities and budget

THE first thing I should like to consider in the organization of a home service department is its objectives. They may vary somewhat in different companies and it is necessary to keep them in mind when allocating work and planning the program. The objectives of our division are:

1. To establish and maintain friendly relations between company and customers.
2. To prevent and correct customer complaints by making sure equipment will perform satisfactorily and by making sure the customer understands its use.
3. To encourage the replacement of outmoded gas-burning equipment and the purchase of additional equipment when such purchase is warranted.
4. To encourage the fullest legitimate use of refrigerator, range and water heater.

The objectives themselves as well as their relative importance will depend on company policy, which is determined by management's wishes with relation to

Presented before A. G. A. Home Service Workshop, Pittsburgh, Pa., Jan. 31, Feb. 1-2, 1946.

BY RUTH SOULE

Director, Home Service Division
The Brooklyn Union Gas Company,
Brooklyn, New York

services, merchandising, promotion, advertising and publicity. Organization and operation will be further influenced by additional factors:

The number of home service workers.
The number of meters per home service worker.
The kind of community served, whether metropolitan, urban or village.
The geographical area to be covered.

The number of home service workers would influence the kind of program planned with respect to the amount of time required for any activity. For instance I shouldn't suppose that a one or two-girl department could find time to develop and test a large number of recipes or new equipment; and I should think it would be practical to work up a few demonstrations to be used over a season. In other words, as much work as possible would have to be made routine. (I am being very cautious at this

point, because the amount of work I have seen done by one- and two-girl departments staggers me.)

If a home service department can reach most of its customers within a year, it is logical that many community activities will be undertaken and so a variety of activities in sequence would be necessary to maintain interest. If the community is metropolitan, so that only a percentage of customers can be reached in a year, the activities would be designed to reach the greatest possible percentage of people, with a variety of activities running concurrently to appeal to widely different interests. In this case a backlog of one or two activities, retained in modified form year after year gives continuity; to this basic program will be added activities to meet the trends of the times and to interest as great a variety of customers as possible.

Careful advance planning for any activity is essential if it is to run smoothly. It may be necessary to explain to management the reason that considerable time must be devoted to such planning. In organizing a program, consideration should, I think, be given to time and

This advertisement of the Cincinnati utility depicts the constant stream of questions handled daily by home service departments

cost per capita for any activity. To what extent would this cost be offset by value in load building, sales promotion or publicity? As an example, I might mention individual instruction, for which per capita cost is high in both time and money. Our experience has convinced us that it is well worthwhile to devote a fair percentage of time to this activity because of the widespread word of mouth publicity that accompanies it and follows it; in other words, every "graduate" becomes an excellent salesman for gas and gas equipment, as well as a goodwill messenger for the company.

Let's evaluate a few general activities on the basis of cost per capita, starting with the lowest and ending with the highest:

1. Talks or simple skits.
2. Demonstrations, provided attendance is fairly high.
3. Consultant services.
4. Home calls.
5. Individual instruction.

All these activities are valuable, so the program would be balanced by weighing the less costly against the more expensive, to yield the greatest amount of value for the company for each hour and dollar spent.

Cooperation in training programs for

salesmen and servicemen, or in sales promotion activities, is very important, and I think we all agree that whatever time such cooperation requires is admirably spent. How much time shall be allocated to preparation of food for employees' social activities? There is no specific answer; employee relations benefit through cooperation of this kind; but it should not require so much time as to interfere with the planned program. Incidentally, we have found morning coffee a simple and pleasant method of promoting employee relations, and we transact a good deal of business during these five or ten minute calls.

Home Service Budget

Until I veered away from my subject, we had been talking about costs; so let's consider the budget at this point. Accounting systems are not the same in all companies. Home service costs may be entirely or only partly separated from those of other departments or divisions. Our budget consists of capital expenditures for relatively permanent things, such as furniture, lamps, files, typewriters; and operating expenses. Our operating budget for the last prewar year consisted of the following items, and I am including with each the ap-

proximate percentage of total operating cost allotted to it:

Recipe sheets	7%
Schedules for classes	1.5%
Theatre cooking schools	2.3%
Multigraphics and mailing invitations	
to special demonstrations	2.6%
Postage for special invitations	2.0%
Office Postage	.6%
Stationery	2.0%
Car Tickets	1.5%
Petty cash (food, laundry, incidentals)	11.0%
Salaries	67.0%

Still with an eye on the budget, we come to the next question: When are new people needed? I would say that new people are needed when the sustained program leaves no leeway for illness, vacations or resignations. It is important before adding a new person, however, to have a plan for utilizing her time fully—important both for efficiency's sake and for morale. If turnover presents a problem (if, for instance, a company does not permit a girl to remain after she has married) it might be well to consider having one or more girls in process of training, ready to take over when the need arises.

Division of Work

Division of work among members of the staff suggests a question that has always interested me. Shall we divide all the work of the department by assigning to each girl specific work, for which she alone is responsible? Or shall we give each girl responsibility for work that is clearly her own, leaving other work to be done by the group, each girl sharing responsibility with the others, if girls are widely scattered. In other words, do we want specialists within our group, or do we want everybody in the group to be able to turn her hand to do anything that may need to be done?

If we never had to consider illness, vacations or resignations, the specialist pattern would probably prove more efficient. But these things do happen. And even if they didn't I should prefer to sacrifice some efficiency for the sake of the stimulation of group work. Through it I think girls develop latent abilities, learn to work smoothly with other people and assume responsibility more readily. And it helps weld the group together, which is good for morale. I might add that I have discovered, since

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a year and a half ago when I had to replace most of my staff in little more than a month, that the group method makes training much more difficult.

Our setup works like this: Each lecturer is in charge of a branch auditorium, and assumes responsibility for home service activities in her branch and the territory around it. She builds attendance, gives demonstrations, takes care of her bills, handles correspondence that comes to her, gives talks to groups, works with the salesmen at their request, and in general personalizes the company within her territory. But all the lecturers, working together, plan photographs for our bill enclosures, assemble the properties, and prepare and arrange the food and the setups. They test equipment for performance, both ranges and small equipment brought in by manufacturers. They test recipes, write them up, and compile and proof-read the sheets. They plan their demonstrations together. They plan and prepare refreshments for occasional company meetings and parties, and assist in sales campaigns.

Home Calls

I am about to appear inconsistent. Because, having waxed enthusiastic about every girl being able to turn her hand to anything, I'll tell you that, unlike many companies, we have a separate staff for home calls. That is because, in proportion to meters, we have a relatively small number of auditoriums, and therefore a relatively small number of lecturers; so we plan to utilize their full time for their activities. Time required for traveling is also an important consideration, and a full day spent in a limited area



Elsa Steinberger of the Brooklyn Union Gas Company's home service department giving salesmen pointers on using gas appliances

yields greater results than if the day were broken.

As you know, most home calls—I should say more than 90%—follow a general pattern, as far as any general pattern may be said to apply to individuals in their homes. When a call does not follow the usual pattern, it is important that the girl know whether to attempt to correct the difficulty herself, during the call, or whether to report back to the office for help. For example, if the customer is foreign-born, and has difficulty with one of her traditional

dishes, we would test the customer's recipe, and report back to her.

It sometimes appears that, although a range appears to operate perfectly, the customer has trouble baking, even though it is evident that her technique is sound. It is obvious that a baking call is necessary—and we never bake, broil or roast in a customer's home until we are certain the range is perfectly adjusted, because it is vitally important that the product be beyond criticism if the customer is to have complete confidence in her range thereafter. So a customer service man and the home call girl or lecturer make a second call, by appointment. The customer service man makes sure the range is functioning perfectly; then the home service girl bakes our standard layer cake, using our own materials and pans to reduce variables to a minimum. Broiling and roasting are handled in the same way.

This home call group works very closely with the lecturers, both as a group and as individuals, for the sake of constant training, and to maintain morale.

And now we come to records and reports. I suspect that most home service workers compile records and write reports with less enthusiasm than they

DEMONSTRATIONS
All Demonstrations from
2:00 to 3:30 P.M.

MARY OFFICE
180 REINSEN STREET, BROOKLYN
WEDNESDAYS THURSDAYS

PLATTSBURGH OFFICE
19 DURYEA PLACE, BROOKLYN
MONDAYS TUESDAYS

EAST NEW YORK OFFICE
2950 ATLANTIC AVENUE
WEDNESDAYS THURSDAYS

JAMAICA OFFICE
49-67 162nd STREET, JAMAICA
MONDAYS TUESDAYS

ELKHORN OFFICE
66-08 QUEENS BLVD., FLUSHING
WEDNESDAYS THURSDAYS

SCHEDULE OF CLASSES

HOME SERVICE DIVISION

WEEK BEGINNING

SEPTEMBER 23	PRESERVING AND PICKLING
OCTOBER 20	SOUP FOR BUDDIES
OCTOBER 27	COLD CUTS INCOGNITO
NOVEMBER 3	PIES FOR POP
OCTOBER 31	HALLOWEEN PARTY
NOVEMBER 7	GOOD THINGS FROM AFAR
NOVEMBER 4	AUTUMN LUNCHEONS
NOVEMBER 11	TEA-ROOM SHIFTS
NOVEMBER 18	DESSERTS WITH FRUITS and SYRUPS
NOVEMBER 25	CAKES FOR NOW and CHRISTMAS
DECEMBER 2	YEAST-BREAD SPECIALTIES
DECEMBER 9	EARLY CHRISTMAS PREPARATIONS
DECEMBER 16	SAIN'T NICK'S FAVORITES
HOLIDAY IN THIS WEEK	

THE BROOKLYN UNION GAS CO.

Attractive mailing piece calling attention to demonstration schedules

work with people. I believe that records should be as few and as simple as we can make them and still provide the necessary information on all activities. And I believe that our reports on activities should be brief, but complete as we can make them. After all, the only way management has of determining our value is by our reports. As for records, I find that I can get better perspective on activities by looking at a cold, impersonal set of figures. Intangible values are impossible to measure and still very important, so if records show a job well done, when the intangibles are added the total result is a job very well done.

I prepare a weekly report, which covers in informal language everything we have done during the week. A monthly report, which is more selective, is designed and prepared for inclusion in an overall New Business Department report for management. I also prepare a brief annual report, which in normal times I supplement for my own satisfaction by an analysis of all activities, and by comparisons with previous years.

Informative Records

I will run briefly through the records we keep. There aren't many, but they provide all the information we need; when they do not, we change them. Each lecturer fills out a brief monthly report on mimeographed blank; this consists of dates and attendance figures for each demonstration, broken down into new and repeat members; cost of food, laundry and incidentals; subjects of demonstrations, and any interesting comments. Figures are totalled across and down to give a record of all activities at each location for any given week, as well as for the month. The lecturer also keeps a record book in which she lists all items purchased for each demonstration and the cost of each; the date of each order and the date the bill is paid. She reports each week the kind and amount of material she has mailed, any unusual comment or question, and all customer requests received other than those connected with the demonstration. She requisitions paper goods and office supplies for her own kitchen. The lecturers also file food and equipment bulletins, technical data and magazine material.

The home call group record in their diaries the names and addresses of the customers called on each day, indicating



Current advertisement of the Pittsburgh group of companies carries strong gas cooking copy

by initial the appliance in each case. They total the calls for each day, week and month, with a carryover total beside each weekly total, so we can tell at a glance how many calls each girl has made so far that year. Once a week the girls fill out a permanent record card for each call they have made.

We keep a daily record of customer requests with the subject of each, for use in the weekly report. Recipe sheets are typed, then proof-read, and finally clipped and filed. Data is copied from delivery tickets on forms which are then routed for the home call group; home call record cards must be filed. Office supplies and paper goods for demonstration needs must be requisitioned.

I should like to say a word in connection with one record we keep which requires several hours each week. Like all of you, we have a petty cash fund from which each lecturer draws a fixed amount of money. She turns in her bills each week, and the money she has spent is returned to her, making a revolving fund which covers her expenses. Since our bills are sent to the Accounting Department, we copy them in a book, grouping them for each activity engaged in by each lecturer, so that we have the cost of each demonstration as well as that for each location. This book has proved invaluable on many occasions—

for the necessary figures at the beginning of rationing, for estimating the cost of a new project, for comparing food costs in various districts and in different years. I have one of the books, if you would like to see it.

How does the community know about home service? The kind and amount of advertising available to a home service department vary widely in individual companies and in different communities. Word-of-mouth publicity is exceedingly important. The better we know our sales people, cashiers, salesmen, service men and dealers, the more they will be inclined to tell customers of home service activities. And the greater the number of customers we reach through home service activities, the greater will be the number of people who hear of those activities. Friendly relationships with teachers often lead to requests for home service cooperation. The metropolitan company is in a less advantageous position with regard to word-of-mouth publicity than is a company operating in a close-knit community. Food editors of some newspapers welcome stories about new projects, especially if they are dramatic.

Advertising Home Service

Newspaper articles and radio talks have places on this program, so I need only mention them. In normal times our grocers and butchers are delighted to put our recipe sheets and demonstration schedules in their delivery baskets and on their counters. Stores near our branch offices, to which people used to flock for gadgets or food at the end of the demonstration are glad to have this material.

Window and floor displays and truck posters are available in greater or less degree according to the display studio's schedule.

The amount of advertising will, of course, depend on a company's allocation of money, and the type of advertising on a company's policy.

This brings me to the end of the points I listed. As I told you when I began, I have solved no problems for you, and much of what I have told you, you already knew. The general idea was to gather together the questions and considerations that affect the organization and operation of a home service department, and present them to you so you could discuss those in which you are most interested.

Banish Baking Failures!

Laboratories' tests show the effect on baking results of different kinds of utensils and various oven materials

BY JOAN HUCK

American Gas Association
Testing Laboratories

THE kind of utensils or pans used in baking cakes or roasting meat definitely makes an appreciable difference in final results obtained by housewives and if not taken into consideration quite often may be the cause of baking failures.

Home service personnel estimate that up to 90 per cent of actual baking complaints received from housewives may be attributed to incorrect use of oven utensils. In fact Lucy Maltby, home economics director of the Corning Glass Works, pointed out in a talk recently given before the American Gas Association

Home Service Workshop that home economists in their test kitchens are able to produce identical baking results with any food when using utensils of different materials, provided the oven temperature is adjusted to take into account the fact that utensils of different materials absorb varying amounts of heat.

Satisfying the customer, however, that her range is not at fault in the case of such baking failures requires considerable information and data as well as tact. The facts are that so little technical information or data on the factors influencing utensil heat absorption has been available that very little specific information could be passed along to housewives as to the intelligent use of different kinds of utensils or what temperature allowances should be made for pans and utensils of differing materials.

While some studies have been made of factors influencing heat absorption, no complete quantitative analyses of the effect of kind of utensil and oven on heating speed and efficiency have been reported previous to an extensive investigation of this subject recently completed by the American Gas Association Testing Laboratories. Results of this study are published in Research Bulletin No. 39, "Fundamentals of Heat Absorption by Utensils in Gas Range Ovens."

Summarizing results of the investigation pertinent to the housewife and which may be of considerable help to home economists in their experimental studies, it was found generally that the

most effective types of oven utensils from the standpoint of heat absorption are those with large bottom areas and with glass or dark surfaces. Browning of cakes is effected by the type of utensil bottom finish and material but not by the finish when applied to the inside of the utensil. Temperature settings of considerable variation were found necessary



Similar roasting results obtained in plain and silvered glass baking dishes with 80 degrees difference in oven temperatures

for different finishes as noted in the accompanying table.

COMPARISON OF OVEN TEMPERATURES PRODUCING EQUAL HEATING SPEEDS FOR VARIOUS FINISHES OF UTENSILS

Small Aluminum Pan	Large Aluminum Pan	Large Glass Baking Dish
Black Shiny	Black Shiny	Glass Plated
300 372	300 415	300 445
325 410	325 452	325 500
350 452	350 498	350 561
375 490	375 543	375 617

In initial tests utensils were filled with water to determine their heat absorption and this data then supplemented by heat absorption measurements conducted while actually baking and roasting food in covered dishes of different finishes. Tests included determination of the oven temperature necessary to roast beef in a silver-plated glass baking dish to the same internal temperature as an identical roast in a plain glass baking dish roasted at a 300 degree oven setting. It was found that for a roasting time equivalent to that of the plain glass utensil, the silvered utensil would require an oven temperature slightly higher than 380 degrees. The drippings loss was found to be slightly higher in the case of the roast in the plain dish, being 26.2 per cent as compared with 24 per cent for the roast in the silvered dish.

Housewives generally have observed that cakes baked in utensils of different



Method of measuring heat absorption of utensils

materials will possess varying degrees of brownness. It was felt worthwhile to obtain data to show the relationship between the absorptivity of cake pan surfaces and the color of the cake surface. For these tests, regular unpolished aluminum, polished chrome plated, and black, white and aluminum painted finishes were used. When the above types of surfaces were applied to the inside of the bottoms of the pans, no change in the color of the cake was noted. A definite relationship was found to exist between the color of the bottom of the cake and the absorptivity of the surface employed when the five types of surfaces were applied to the outside bottoms of the pans. Highly polished metal surfaces produced cakes with bottom crusts lighter in color than cakes baked in oxidized or painted surfaces.

Studies were also conducted to determine the effect of various kinds of ovens on the amount of heat absorbed. It appears that the most effective and efficient oven designs are usually those which have a black bottom finish with chrome

plated sides, and are constructed to permit passage of flue gases through the oven. Tests with larger pans, however, indicated that when utensils fill a large volume of the oven space, use of black oven walls serves to increase rate of heat absorption appreciably.

Since oven interior finish was found to show some effect on amount of heat absorbed by water in utensils, tests were conducted to determine whether a similar effect was noted on reflectance readings of cake surfaces. Cakes baked in an oven having polished chromium walls were compared with others baked in the same oven when the polished walls were coated with lamp black. There was no difference in color between the two sets of cakes.

Fortified with such information on the effects obtained with different ovens, utensils and oven temperatures, home service women should be able to work out practical guides for housewives to enable them to overcome baking failures attributable to incorrect use of oven utensils. Results are well worth the effort.

Lone Star Expands Pipeline System

RIIGHT-OF-WAY for a new 80-mile 14-inch pipeline of Lone Star Gas Company from Opelika in Henderson County, to Carthage in Panola County, Texas, was cleared by mid-February after saws had cut through about 60-miles of East Texas forest. It was one of the largest clearance jobs ever undertaken by the company and was accomplished in record time by means of four modernized circular saws called "Little Giant Tree Fellers." The new 14-inch line will secure additional gas reserves for the company's 5,000 mile network of transmission mains serving 300 towns and cities in Texas and Oklahoma.

Also under construction eight miles north of Carthage by Lone Star Producing Company is a cycling plant that will tap one of the largest gas distillate reserves in the world. The plant, jointly owned by the company and Rogers Lacy of Longview, will be operated by Lone Star Producing Company.

The Carthage plant will have a capacity for processing 50 million cubic feet of gas for cycling and a further capacity on initial installations of an additional 50 million cubic feet of pipe line delivery of gas. All gas will be brought to the plant through a gathering system in the Carthage field and cycled gas will be returned to the producing formation.

A.G.A. Directors Discuss 1946 National Program



Meeting of the Executive Board of the American Gas Association in New York City, February 6. In the picture are, seated left to right: Maj. T. J. Strickler, vice-president and general manager, Kansas City Gas Co.; Chas. M. Cohn, chairman of board and president, Consolidated Gas Electric Light & Power Co. of Baltimore; Kurwin R. Boyes, secretary, A. G. A.; R. H. Hargrove, vice-president, A. G. A. and vice-president and general manager, United Gas Pipe Line Co.; Gladys Hanshaw, A. G. A.; Everett J. Boothby, president, A. G. A. and vice-president and general manager, Washington Gas Light Co.; Colonel Hudson W. Reed, vice-president, A. G. A., and president, The Philadelphia Gas Works Co. (Standing Left to Right) Randall J. LeBouef, Jr., counsel, A. G. A.; H. Leigh Whitelaw, managing director, G.A.M.A.; Lyle C. Harvey, president, G.A.M.A. and president, Bryan Heater Co.; R. M. Conner, director, A. G. A. Testing Laboratories; Edward P. Noppel, chairman, A. G. A. Co-ordinating Committee on Research and general consultant, Ebasco Services Inc.; Henry H. Morse, vice-president, Florence Stove Co.; Henry Fink, vice-president and general manager, Michigan Consolidated Gas Co.; Earl H. Eacker, vice-president, Boston Consolidated Gas Co.; Dorr P. Hartson, chairman, National Advertising Committee, A. G. A., and vice-president and general manager, Equitable Gas Co.; C. S. Goldsmith, vice-chairman, Technical Section, A. G. A., and engineer, The Brooklyn Union Gas Co.; Norton McLean, president, American Meter Co.; Alvan H. Stack, president, The Tampa Gas Co.; John J. Quinn, chairman, Residential Gas Section, A. G. A., and sales manager, Boston Consolidated Gas Co.; Joseph N. Greene, chairman, Membership Committee, A. G. A. and president, Alabama Gas Co.; Frank H. Adams, chairman, Manufacturers' Section, A. G. A., and president, Surface Combustion Co.; George E. Whitwell, chairman, Laboratories' Managing Committee, A. G. A. and vice-president in charge of sales, Philadelphia Electric Co.; H. Carl Wolf, managing director, American Gas Association

Trends of F. P. C. Natural Gas Investigation

A TWO-DAY session of the natural gas investigation of the Federal Power Commission was held at Biloxi, Mississippi, February 11 and 12 to give the state officials an opportunity to write into the record of the hearings the history of Mississippi as a producing, consuming and exporting state.

Governor Thomas L. Bailey submitted a statement read by William B. Fentaine, Assistant Attorney General, opposing any control of end use of gas by a Federal agency.

Greek L. Rice, Attorney General of Mississippi, outlined the state laws concerning oil and gas and pointed out that reliable authorities expect the state's reserves to increase substantially in the near future.

William M. Vaughney, an independent producer of Jackson, Mississippi, discussed the producers' viewpoint and supported the contentions of the state officials. He made a plea for expanding markets for gas and an increase in the wellhead price.

Previously a more extended hearing was held at Houston, Texas, January 28 to February 7. Highlights of these sessions were summarized by the Associated Press, February 23, as follows:

"The F. P. C. at its Houston hearing, heard Texas officials and industry representatives argue that Federal control should not be broadened in any way.

"On the other side of the whole controversy were the coal, railroad and allied union interests affected by the question of gas.

"These interests put in no direct testimony at the Houston hearing. But their position was made clear by the questions their counsel put to witnesses on cross-examination.

"Thus interpreted, the coal, railroad and related union people believe:

"1. That gas is a superior fuel and should be designated for superior uses, such as heating homes.

"2. That gas reserves may not be sufficient to last very long if the commodity is extensively exported for such inferior uses as burning under boilers.

"3. That Texas should insure its industrial future by limiting exports of gas and thus luring factories to the state.

"4. That the gas industry, from a national standpoint, would be more efficiently regulated by a Federal agency, since control by the various states might result in conflict and confusion.

"The Texas witnesses, on the other hand, testified:

"1. That the Texas Railroad Commission, which regulates gas matters within the state, is doing everything it can to prevent waste.

"2. That waste of gas has been greatly reduced through the efforts of the state commission and the industry.

"3. That gas reserves of Texas are sufficient for the 'foreseeable' future. Not more than 15 per cent of the natural gas produced and saved in Texas goes into the export pipe lines.

"4. That there should be no regulation that would prohibit consumers from using gas as they choose.

"5. That the free play of competition should be left alone to determine the price and use of gas.

"6. That higher prices at the well would do much to forward the cause of gas conservation.

"Meanwhile, the F. P. C. itself denies that it intends to encroach upon the state's jurisdiction in gas regulation.

"Commissioner Nelson Lee Smith, in opening an Oklahoma City hearing, said 'the Federal Power Commission has no desire or intention to extend its jurisdiction to matters properly coming within state regulation.'

"But the Texas industry noted that consumer-use of gas was one topic listed by the commission to be discussed at the hearings. Through such end-use control, the Texans fear, the commission could reach back and govern production."

The next hearings were scheduled for Chicago and Charleston.

Natural Gas Meeting Program Committee



Walter C. Beckjord

CHAIRMAN R. H. Hargrove of the A. G. A. Natural Gas Department has appointed a Program Committee for the spring meeting at Cincinnati, May 7 and 8, 1946. The committee chairman will be glad to receive suggestions as to important matters for discussion. The committee personnel follows:

W. C. Beckjord, president, Cincinnati Gas and Electric Company; chairman; Floyd C. Brown, vice-president, Natural Gas Pipeline Company of America; Wm. Moeller, Jr., vice-president, Southern California Gas Company; C. P. Rather, president, Southern Natural Gas Company; Paul Taylor, vice-president, Stone & Webster Service Corp.; C. H. Zachry, president, Southern Union Gas Company.

Booklet Gives Background of New York

A NEW booklet, entitled "Serving New York," has been published by Consolidated Edison Company of New York, Inc. According to Ralph H. Tapscott, president of the company, the booklet "is believed to be one of the most complete and informative stories of its business ever presented by an American corporation." It was prepared primarily for investors in the securities of the Consolidated Edison System Companies, and will serve as a supplement to the regular annual reports.

The booklet, which is illustrated, gives background information on the company's development, current operations, rates and the characteristics of New York City as a market for public utility service. It also contains fifteen-year financial and statistical tables.

A.G.A. Forms Membership Committee



J. N. Greene

PRESIDENT E. J. Boothby of the American Gas Association has appointed a Membership Committee of leading executives with J. N. Greene, president, Alabama Gas Company, Birmingham, as chairman. While the Association enjoys the membership of most of the gas companies in the United States, the new

committee will make an effort to secure the enrollment of the comparatively few non-member gas companies in an effort to make the A. G. A. as nearly 100 per cent representative of the industry as is possible. Other problems in connection with all classes of membership will be assigned to the committee for study and recommendation.

Each member of the committee will cover a section of the country. E. H. Eacker, vice-president, Boston Consolidated Gas Co., will handle the New England states; John A. Frick, president, Allentown-Bethlehem Gas Co.—Delaware, New Jersey, New York, and the manufactured gas companies in Pennsylvania;

Edward M. Borger, president, Peoples Natural Gas Company—Ohio, West Virginia, Kentucky, and natural gas companies in Pennsylvania; R. C. Brehaut, manager, Suburban Companies, Washington Gas Light Co., Washington, D. C.—District of Columbia, Maryland, and Virginia; A. H. Stack, president, Tampa Gas Co.—North Carolina, South Carolina, Georgia, Alabama and Florida; D. H. Frazer, Jr., president, Battle Creek Gas Company—Michigan, Indiana, Illinois and Wisconsin.

B. F. Pickard, president, Interstate Power Company—Minnesota, Iowa, Nebraska, North Dakota and South Dakota; E. H. Lewis, vice-president, St. Louis County Gas Co.—Missouri, Kansas, Oklahoma and Arkansas; Chester L. May, vice-president, Lone Star Gas Co.—New Mexico, Texas, Louisiana, Mississippi and Tennessee; F. T. Parks, vice-president, Public Service Company of Colorado—Montana, Wyoming, Colorado, Utah and Nevada; N. Henry Gellert, president, Seattle Gas Co.—California, Arizona, Oregon, Washington and Idaho; C. P. Rather, president, Southern Natural Gas Co., Birmingham, Alabama—Pipe Line Companies.

Kurwin R. Boyes, secretary of the American Gas Association, will be the secretary of the Membership Committee.

Water Heater Sizing Booklet Available

A NEW bulletin on Gas Water Heater Sizing, Location and Installation has been issued by the Pacific Coast Gas Association. Recognizing the fact that hot water service in many homes has been inadequate, the bulletin features a chart recommending larger size storage capacities.

It is particularly pertinent to natural gas areas as some manufactured gas companies may be concerned over the higher operating and installation cost of larger sizes for small homes.

Copies of the bulletin may be obtained at cost, 5 cents per copy in lots of 100 or more; single copies are 10 cents. With it, the As-

sociation is offering 20' x 30 inch wall cards bearing the chart for display on dealers' premises. The cards are being sold at 75 cents each for single copies and 60 cents each in lots of 10 or more.

Address P.C.G.A. at 447 Sutter St., San Francisco 8, California.

Southern Meeting Plans

A FEATURE of the Southern Gas Association's annual meeting will be a one-day Home Service Workshop under the direction of Vivian Marshall. It will be held on Wednesday, March 20, at the Galvez Hotel in Galveston.

Headquarters for the annual meeting, March 21 and 22, will be at the Galvez and Buccaneer Hotels.

"Gas Range of Tomorrow" Design Contest Attracts Hundreds of Entries

WHOLEHEARTED dealer and gas company support of American Stove Company's \$18,000 Magic Chef "Gas Range of Tomorrow" design contest has helped immeasurably in building up entries to an average of 400 a week, according to S. E. Little, vice-president.

Typical of the many special activities conducted by gas companies and dealers was a recent dinner given by the Grand Rapids District of the Michigan Consolidated Gas Company for 21 of the city's leading architects and designers.

During the get-together all details of the contest were explained by Wallace M. Chamberlain, Michigan Consolidated sales manager. The meeting resulted in submittal of 13 entries. Similar meetings are being planned in other cities throughout the country.

Mr. Little stated that, on the basis of re-

turns to date, the range design contest has proven to be one of the most successful of its type ever conducted. Entries have come from all walks of life. Many have been submitted by housewives whose response to the company's invitation to "tell us what you want in a kitchen range" was immediate.

Hundreds of entries have been received from architects and designers as well as students, artists, sculptors, salesmen, servicemen and veterans, mechanics, and even bankers.

Architectural Forum is sponsor of the Magic Chef contest. George B. Nelson, A. I. A., is professional advisor. Judges are Dr. Elaine Knowles, home economist of Teachers' College, New York; Peter Schlaermundt, New York designer; Samuel Marx, Chicago architect; Edward D. Stone, New York architect, and Gardner Dailey, San Francisco architect and designer.



Wallace M. Chamberlain, Michigan Consolidated Gas Company sales manager, is shown (left above) demonstrating features of a gas range top burner to Warren N. Rindge, Charles M. Norton, and Wilfred P. McLaughlin, prominent Grand Rapids architects. Occasion was the recent dinner tendered architects and designers by M.C.G. on behalf of American Stove Company's \$18,000 Magic Chef "Gas Range of Tomorrow" design contest.

Building and Remodeling Standards Published

A PAMPHLET recommending building and remodeling standards to eliminate hazards in the home has been published by the National Safety Council, 20 North Wacker Drive, Chicago 6, Ill. Prepared by the Home Safety Technical Committee, whose membership includes C. George Segeler, utilization engineer of American Gas Association, the publication calls attention to factors influencing the design and construction of safer homes.

Gas is covered directly or indirectly in several places: First, where an adequate supply of hot water is suggested and proper relief valves are recommended; again where equipment is tied in with the standards of the American Standards Association and the National Board of Fire Underwriters as well as the local gas company; finally, where mention is made of the convenience of modern gas equipment and the proper placement of gas meters in a house.

Copies are available from the National Safety Council to all persons interested in the planning, building and financing of homes.

Servel Offers New Freedom Booklet

A NEW booklet showing all important points of the Servel-designed New Freedom Gas Kitchen is being made available to gas utility companies, it has been announced by R. J. Canniff, advertising and sales promotion manager for Servel.

"In addition to showing all the special points of the Servel unified gas kitchen," Mr. Canniff said, "we have included in this booklet complete designs with art treatment in four colors of eight different kitchens. We made every effort in this book to point up family living qualities which can be combined in efficient kitchens when the kitchen as a unit is designed to fit specific family needs."

In addition to the eight full-color kitchen designs that are shown in the booklet, separate spreads are devoted to the gas refrigerator, "CP" gas range, and the exclusive cabinet designs of the Servel line.

Natural Gas Volume

THE huge volume of natural gas handled by the gas companies, and the further amounts used in the oil and gas fields and in the manufacture of carbon black, make up together the total marketed production which last year ran to more than three and three-quarter trillion, or 3,780,232 million, cu.ft.

This inconceivable volume may perhaps be more easily comprehended by thinking of it as forming, under ordinary atmospheric pressure, a single cube of natural gas measuring just under three miles in each dimension, weighing about 91,000,000 tons—approximately the weight of the steel industry's annual production—and equivalent in heating value to 150,000,000 tons of coal.

—The Lamp

Now They're Cooking with Gas



DON MCNEILL, host of "The Breakfast Club" and Tom Breneman, host of "Breakfast in Hollywood," two popular daytime radio programs, are shown above having a breakfast discussion with top Powers model, "The Most Televised Girl in the World," Patricia Fitzgerald Vance, about healthier, more nutritious breakfasts.

In addition to conducting the Patrician Fin-

ishing School in Chicago, Patricia helps add the woman's viewpoint, as well as creating and posing for many of the pictures shown on the gas displays used throughout our industry.

This picture was secured for a display by the Bishop Publishing Company during the recent World Premiere in Chicago of Tom Breneman's new talking picture "Breakfast in Hollywood."

Independent Natural Gas Group Elects Officers

THE Independent Natural Gas Association of America at its first annual meeting in Houston, Texas, January 28, re-elected all of its officers and six new directors to serve during 1946.

The officers are E. Buddrus of Chicago, president of the Panhandle Eastern Pipeline Company; president; Paul Kayser of Houston, president of the El Paso Natural Gas Company, first vice-president; J. H. Dunn of Amarillo, president of the Shamrock Oil and Gas Corporation, second vice-president; F. W. Peters of Tulsa, treasurer of the Oklahoma Natural Gas Company, treasurer, and John A. Ferguson of Washington, D. C., executive director.

New members of the Board of Directors are H. W. Bass of Dallas, president of the Trinity Gas Corporation; Frank Buttram of Oklahoma City, president of the Buttram Petroleum Corporation; B. A. Hardy of Shreveport, La., independent operator; D. A. Hulcy of Dallas, president of the Lone Star Gas Company; F. S. Kelly, Jr., of Shreveport, Arkansas-Louisiana

Gas Company; and Homer W. Long of Guyon, Oklahoma, independent operator.

The Association has a membership of 1280; classified as 892 royalty owners, 120 producers,



Above are 12 of the 21 members elected to the Board of Directors of the Independent Natural Gas Association of America to serve during 1946. Left to right, bottom row, Clyde H. Alexander, D. D. Harrington, Homer W. Long, J. H. Dunn, Harry L. Mann, (top row) Mark Adams, Burt R. Bay, William H. Wildes, F. S. Kelly, Jr., E. C. Joullian, D. A. Hulcy, E. Buddrus, president of Panhandle Eastern Pipeline Co., who also was reelected president of I.N.G.A.A. for 1946.

41 transporters, 174 employee members and 53 associate members. The membership is represented in 31 states, with the four major producing states in the southwest and California leading.

Public Service Plans Construction Program

A CONSTRUCTION budget for 1946 of more than \$17,000,000 has been authorized by Public Service Corporation of New Jersey for new equipment, extensions and replacements for its subsidiary operating companies. This does not include any part of the \$23,000,000 estimated cost of the proposed new electric generating station at Se-waren.

Of the total amount in the 1946 construction budget, \$5,514,192 is for the Electric Department and \$5,329,578 for the Gas Department of Public Service Electric and Gas Company; \$3,875,350 for Public Service Coordinated Transport and \$1,997,600 for Public Service Interstate Transportation Company. The System Gas Companies of the Corporation—Atlantic City Gas Company, Peoples Gas Company and County Gas Company—are allotted approximately \$365,000.

All-Purpose Heat Source

USE of a single source of heat for such varied purposes as house heating, hot water, refrigeration, cooking, baking and ironing is possible under a system being developed by Orion O. Oaks, chief engineer of the John B. Pierce Foundation, Raritan, N. J., who described it recently at the convention of the American Society of Heating and Ventilating Engineers.

An ordinary type of furnace would have the usual water replaced by tetracresylsilicate which boils at 800 degrees and solidifies at 65° below zero F. The hot fluid would be circulated through heat transfer apparatus for house heating, hot water heating and refrigeration, and would be used directly in coils for cooking and baking by radiant heat.

Pennsylvania Association Holds Sales Meeting

A RECORD-BREAKING gathering of eastern gas men attended the Mid-Winter Sales Conference of the Pennsylvania Gas Association, held at the Benjamin Franklin Hotel, Philadelphia, Feb. 1.

R. W. Uhler, of Allentown, Pa., chairman of the Association's New Business Committee, opened the meeting at which G. L. Cullen, of Harrisburg, and G. M. Jones, of Reading, acted as co-chairmen. Frank H. Trembley, Jr., of Philadelphia, first vice-president, P.G.A., welcomed the delegates and acted as master of ceremonies at the luncheon session.

Feature of the morning session was the first showing of the Servel New Freedom Gas Kitchen program under the direction of R. J. Canniff, advertising and sales promotion manager of Servel, Inc. Details of this outstanding program, as outlined by Mr. Canniff, are covered in a separate article elsewhere in this issue of the *MONTHLY*.

Following the Servel presentation, Sol Weill, vice-president, George D. Roper Corp., gave a dramatic presentation entitled "What's Cooking in CP Gas Ranges."

H. Carl Wolf, managing director, American Gas Association, in an inspirational address at the luncheon, outlined highlights of the national promotional program.

The afternoon program included presentations on gas house heating by Robin A. Bell, Surface Combustion Co.; water heating by G. M. Rohde, Jr., Ruud Manufacturing Co., and laundry dryers by W. A. Friedrich, Hamilton Manufacturing Company. Mr. Rohde's paper is reproduced in full elsewhere in this issue.

Southwestern Measurement Course Outlined

THE program for the 1946 Southwestern Gas Measurement Short Course to be held April 23-25 at the University of Oklahoma was outlined during a meeting of the General Committee held in Oklahoma City during the latter part of January.

A large number of topics for classes were submitted to R. M. Scofield, chairman of the Program Committee, and these served as a reservoir from which suitable subjects were selected for the program.

The chairman of the Exhibit Committee, J. L. Griffin, reported that the companies which furnish educational exhibits have shown an unusual interest in this year's short course.

W. H. Woods announced to the General Committee that at least one more Practical Methods report would be available for distribution during the short course.

New England Annual Meeting March 21-22



D. S. Reynolds
N.E.G.A. President

A STRONG program has been prepared for the 19th Annual Business Conference of The New England Gas Association at the Hotel Statler, Boston, on March 21 and 22. This will be the first annual meeting conference of the N.E.G.A.

has held in two years and the first two-day annual affair in three years. Theme of the meeting will be "New Problems Mean New Opportunities."

There are 16 different presentations on the program—including a forum, a radio broadcast, and illustrations of the use of industrial gas in New England during the war. The presentations are divided into two main groups: (1) subjects of a more or less technical nature covering the several phases of the gas industry, and (2) broad, non-technical subjects which would be timely before any association group today.

The technical presentations will cover market research, installment appliance financing, utility commission and court developments, home service, production developments, the gas industry promotion program, gas company radio promotion, and addresses by Pres-

ident Boothby of A. G. A., President Harvey of G. A. M. A., President Reynolds and Executive Secretary Belden of N. E. G. A. Other speakers include D. A. Hulcy, of Dallas, Texas, chairman, A. G. A. Promotional Committee; Edwin L. Hall, secretary-coordinator, A. G. A. Gas Production Research Committee; and Lillian P. Dunbar, of Cambridge, chairman, A. G. A. Home Service Committee and chairman, N. E. G. A. Home Service Educational Committee.

The non-technical presentations will be featured by a labor relations forum of 7 persons and by addresses covering human relations in industry and general management problems in the new era.

On the program will be three faculty members from the Massachusetts Institute of Technology, two from Harvard University, two from the Harvard Business School, and one from the College of Business Administration of Boston University. Three of these educational representatives will present separate addresses and five of them will appear in the labor relations forum.

There will be a home service breakfast on the second morning.

The Program Committee is headed by E. H. Eacker, vice-president, Boston Consolidated Gas Company, as chairman and E. Clyde McGraw, vice-president, Stone & Webster Service Corporation, as vice-chairman.

Convention Calendar

MARCH

6-7 •Home Service Workshop, Pacific Coast Gas Association, Fairmont Hotel, San Francisco, Calif.
7 •A. G. A. Midwest Personnel Conference, Kansas City, Mo.
11-12 •Oklahoma Utilities Association, Annual Convention, Biltmore Hotel, Oklahoma City, Okla.
19 •Natural Gas Investigation, Charleston, West Va.
20 •Home Service Workshop, Southern Gas Association, Galvez Hotel, Galveston, Texas
20-22 •Southern Gas Association, Galvez and Buccaneer Hotels, Galveston, Texas
26-28 •National Restaurant Exposition, Chicago, Ill.
29-30 •A. G. A. Conference on Industrial and Commercial Gas, Commodore Perry Hotel, Toledo, Ohio.

APRIL

1-3 •Meeting of Electric and Gas Industry Accountants, Netherland Plaza Hotel, Cincinnati, Ohio
8-10 •Mid-West Gas Association, St. Paul, Minn.
11-12 •Residential Gas Section, New York-New Jersey Sales Conference, Westchester Country Club, Rye, N. Y.
15-16 •A. G. A. Conference on Operation of Public Utility Motor Vehicles, The Stevens, Chicago, Ill.
15-17 •A. G. A. Distribution Conference, The Stevens, Chicago, Ill.
23-25 •Southwestern Gas Measurement Short Course, Norman, Okla.

MAY

6 •A. G. A. Spring Executive Conference, Cincinnati, Ohio.
7-8 •A. G. A. Natural Gas Department, Annual Spring Meeting, Hotel Gibson, Cincinnati, Ohio
9-10 •Indiana Gas Association Annual Meeting, French Lick Springs, Indiana.
21-23 •Pennsylvania Gas Association 38th Annual Meeting, Galen Hall, Wernersville, Pa.
22-23 •Natural Gas and Petroleum Association of Canada, Windsor, Canada

JUNE

3-5 •A. G. A. Joint Production and Chemical Conference, Hotel Pennsylvania, New York, N. Y.
6 •A. G. A. Mid-West Personnel Conference, Kansas City, Mo.
18-21 •Canadian Gas Association, 39th Annual Convention, Manor Richelieu Hotel, Murray Bay, Quebec
24-26 •American Home Economics Association, Public Auditorium, Cleveland, Ohio

OCTOBER

Wk. of 7th •American Gas Association, 28th Annual Convention and Exhibition, Atlantic City, N. J.

Accounting Section

E. F. EMBREE, Chairman

LEITH V. WATKINS, Vice-Chairman

O. W. BREWER, Secretary

Microfilming in the Office

BY D. A. PLOESSER

Methods Manager, *The Timken Roller Bearing Company, Canton, Ohio*

DURING the last 15 years, microfilm has been used in the office in many different ways. We are all familiar with its use in V-Mail, where it has saved tremendous shipping tonnage in connection with the war effort. Microfilm has found applications in department store and utility accounting. Telephone companies have used it as a permanent record of long-distance calls—sending the original toll slips to the telephone user. Department stores have microfilmed sales slips and forwarded the original slips to the consumer. These are applications where microfilm is used as a direct part of the accounting system.

During the war, microfilm has been used in many instances to maintain duplicates or original corporate records. These records, of course, are stored in a place removed from where regular business records are kept as a precaution in case of bombings or acts of sabotage.

Recently, some companies have found it advisable to use microfilm to duplicate certain important records as a means of insuring against loss or destruction of the originals. The most common use for microfilm in business is the microfilming of records to save storage space. During the past four years the use of microfilm to save storage space has gained considerable momentum.

Storage of Old Records

The storage of old records has been a problem of office management for many years. Usually they are stored in a place that is not usable for any other purpose and, as a result, little attention is given to their maintenance. With the advent of the war, management recognized the necessity of keeping records accessible for possible postwar audit. With the possibilities of a long war it was also recognized that the amount of paper work would increase by leaps and bounds, adding to the space requirements for storage of old records. Investigation showed that 98 to 99 per cent of the storage space could be saved by microfilming certain records and destroying the originals.

By having records on microfilm it is possible to maintain a more orderly file and the possibility of losing documents is eliminated. By the use of a unit index and proper cataloging, microfilm is easily referred to and the perpetuation of each record is made possible.

Presented at Cleveland, Ohio, before National Office Management Association.

By the use of transfer files and storage cabinets, records may be kept in an orderly condition when properly supervised. It still remains a considerable problem to keep the records clean unless you are fortunate enough to have an air-conditioned building for storage purposes. By reducing the volume 98 per cent, the dirt accumulation is also reduced. Due to the small amount of space required, better storage facilities may be provided for microfilm and, consequently, the problem of accumulated dirt is practically eliminated.

By transferring records to microfilm the fire hazard is reduced to a minimum. Again, if we have reduced the volume by 98 per cent, we have eliminated 98 per cent of the fire hazard if film were equally as liable to destruction by fire as the usual paper records.

Life of Microfilm

The next question which might come to your mind is—what is the expected life of microfilm? The Bureau of Standards has made exhaustive tests of film now in use and has determined that film manufactured and processed according to its standards and stored under its specifications will have a life of from 300 to 500 years. Under average storage conditions and usage, the life of microfilm should be well beyond the better grades of Bond paper.

Generally speaking, there are two types of film now in common usage. One having a nitrate base and the other having an acetate base. Nitrate base film is combustible whereas acetate film is not. All microfilm is of the acetate type which is not combustible. Consequently, the fire hazard of acetate film is not as great as that of paper. In the past one always thought of film as being a fire hazard. With modern developments in manufacturing and processing, the fear of fire hazard has been reduced to a minimum and permanency has been established.

The first commercial model of a machine to microfilm records was placed on the market May 1, 1928. The first general usage was that of microfilming checks in bank accounting. We recently heard of a case where film which has been processed 15 years ago was removed from storage for inspection and it was found to be in excellent condition without having been subject to any special atten-

tion while in storage. The film manufacturers have made many improvements in the manufacturing and processing of film in the past 15 years. No doubt, many of you have amateur movie film which has been in storage for at least 15 years and you know by experience that it is not too difficult to maintain this film in excellent condition.

The next question which might arise is—what is the legal status of microfilm records? The Eastman Kodak Company had its attorneys prepare a booklet covering the "Admissibility in Evidence of Recordak Film Picture Records." Many cases are cited where photographic records were admitted as evidence in Courts of Law. By surveying the cases in the booklet it can be seen that photographic reproductions are considered to be secondary evidence.

Quoting from the booklet—

"As such, it seems that it is not admissible except in the *explained* failure to produce the original. If a satisfactory foundation is laid for the introduction of such secondary evidence, it appears that the Courts are willing and ready to accept it."

If we are now satisfied why we should microfilm records, the permanency of film is assured and we are reasonably satisfied with the legal admissibility of microfilm as evidence, we are ready to start on our program of microfilming.

Microfilming Program

First—it is necessary to survey all company records and determine a retention period for each record.

Second—it might be well to design a small card form on which the name of the record, form number, established retention period and reference to other copies of the same form might be noted. The schedule for microfilming should also be noted on this card and finally—management's approval for the retention period and microfilm program of each unit should be obtained.

Third—a catalog of records can now be prepared from the card file representing each record. It is suggested that each department or division be assigned a schedule number and all records be itemized under each schedule number. In this manner the catalog of records has no limitations as to future expansion. Each different type of record will carry a separate item number under its respective subject. Later, the library of microfilm may be cross-indexed and filed according to sched-

ule and item number. To better illustrate—we have established 37 schedules covering such divisions as Accounts Payable, Accounts Receivable, Sales Department, Bond Department, Cost Department, etc. Each schedule has its respective records itemized. Under this plan we have cataloged more than 500 company records.

Next—several records which are known to be in chronological sequence should be selected to start on the microfilming program. It is well to keep a record of the date each box of microfilm is completed, the data mailed for processing and the date received from processor. This might prove valuable in later years in proving that microfilming was done in the usual course of business. It is also advisable to maintain a complete record of the dates original documents are destroyed.

If you have assigned schedule and item numbers for each type of record, the schedule and item number should be noted on the box of film and each box of film should then be numbered consecutively, starting with No. 1 for each unit record. In this manner you will create a microfilm index which will show the schedule and item number and each box of film will be properly identified for quick ref-

erence. The label on the box of film and the film index should show the box number, beginning and ending dates covered on each roll of film and the first and last letter in the case of alphabetical records or the first and last number of documents if they are arranged in numerical sequence. Each division manager or department supervisor should be provided with a copy of his schedule of records. The schedule will show the retention period and, if the record is to be microfilmed, a suitable notation should be made thereon.

The actual microfilm index should be controlled by one responsible employee. When reference to microfilm is required, the employee responsible for the maintenance of the microfilm index should obtain the film, place it on the Film Reader ready for viewing and be responsible for the return of the film to the file.

Assuming the program is now underway—a question will arise—When should we photograph the various records? As the volume of records increases, it will be found advisable to establish a schedule showing what records are to be photographed each month. You will find that some records will require microfilming each month, others quarterly, semi-annually, annually and, in some cases due to the small volume, it will only be necessary to photograph every three or four years. I am thinking of personnel records. We found personnel records of inactive employees were requiring considerable space. We microfilmed all personnel records of inactive employees prior to 1935 and destroyed the original records. We propose photographing inactive records which will be arranged in alphabetical sequence at five-year intervals in the future. Due to the volume, sales invoices are microfilmed every month. Triplicate copies of voucher checks, which is known as the check register, are photographed at six-month intervals. Employees' earning cards are photographed annually.

Volume Determines Frequency

The volume of each record will determine the frequency of microfilming and the schedule should be built-up accordingly. As the program progresses it is well to prepare a graph itemizing each record to be microfilmed. If this is shown in horizontal lines, the progress of each record is readily visible at all times. If the question arises, which record should be microfilmed next—by reference to the graph, this may be easily determined.

Processed film should be placed on the Film Reader and scanned to ascertain that there are no mechanical or processing defects before placing in the permanent file. Like any other mechanical device microfilm machines are subject to error although our experience has shown very little delay caused by imperfections and errors.

It is suggested that film be stored in steel filing cabinets which are manufactured specifically for this purpose.

A record of production should be maintained while microfilming. Commercial models are provided with a "counter" and the number of photographs per 100 ft. roll of film may be obtained through the counter reading. By keeping a running record of the

number of photographs of the various sized documents and the time required to photograph, you will be able to estimate the cost of any type of record. We have found our costs to vary from .3 of a Mill to 33 Mills according to the size of the document.

The average over-all cost has been \$.0016 per document. In stating this cost we have used only the cost of film, rental of machines and labor. In 2½ years with two Commercial Recordaks we have photographed 15 million documents. These have ranged in size from 2½" x 6" to 14" x 17". With a 2½" document on the Commercial Recordak Model 24-1, you can photograph 8,350 documents on a 100 ft. roll of film. With a document 15" in length on the same model, you will have a capacity for 1,800 pictures. The Recordak Corporation has prepared a chart showing the capacity of the various sized documents for each 100 ft. roll of film. With a known quantity of records you can easily determine how many rolls of film will be required. Each 100 ft. roll of film will occupy a space 4" square by 1" thick.

Another interesting thing that we did not ascertain when starting on our program of microfilm was the salvaging of some 1,500 binders of various sizes in the past 2½ years. Many of these binders were in good condition and were re-issued for further use. As the program of microfilming develops, certain changes in binding and filing will become apparent to make possible further savings in current filing methods.

Framingham Plant Wins Safety Award

THE Framingham, Mass., plant of the Worcester Gas Light Company now flies the Liberty Mutual Accident Prevention Flag. This is the first gas utility in the country to receive this coveted award.

For two years this plant has operated without a single lost-time accident. This perfect record was accomplished despite frequent calls for peak production of five million cubic feet daily from a normal operating capacity of only a million and a half feet. In this period, the manufacturing plant facilities were wiped out by a fire and completely rebuilt by the employees without interruption of service.

A statement of how the record was accomplished brought the following comment from Mr. A. C. Frey, Manager, "In April of 1943 we accepted a safety program from our insurance carrier and chose a plant committee to put it into effect. We pointed out to the men that no cost, time or effort was to be spared to reduce accident frequency. By seeking every employee's cooperation with the plan we made them feel that it was to everyone's interest to prevent accidents. We are naturally delighted with the results."

Pointing up Framingham's record of perfection is the industry's frequency of 24.8 lost time accidents per million man hours worked for small- and medium-size plants.

House Organs

• The National Industrial Information Committee of NAM has just completed a study of the subject matter of some four hundred house organs. The investigation uncovers some interesting facts that management would do well to consider.

To begin with, professional thought has insisted for a long time that a well-edited house organ should be a publication by, for and about employees; that it should not be a sounding board for management. Constant repetition of this theme by qualified public relations men over the past few years should have brought the desired result.

But the NAM survey proves the contrary.

For this study shows that on the average there is still more news in house organs about the company than about its employees. The figures are both interesting and discouraging; of the 536 subjects covered in the 400 house organs surveyed, 213 touched on general subjects, 176 on company news and only 147 had to do with news of employees.

Frankly, the house organ is too effective a tool in building healthy employee relations to be thus spoiled. It is important therefore that industry—the gas industry included—review the editorial policy of its house organs from time to time in terms of employee interest and acceptance.—*Passenger Transport*, Feb. 17, 1945.

National Accounting Conference April 1-3

THE National Accounting Conference for the gas and electric industry accountants under the sponsorship of the American Gas Association and the Edison Electric Institute will be held in Cincinnati, Ohio on April 1, 2, and 3, at the Netherland Plaza Hotel. This will be a continuation of the series of joint meetings held for the past several years excepting 1945 when the conference was cancelled due to wartime restrictions on large conventions.

A Joint Program Committee with members from both associations under the co-chairmanship of E. F. Embree, New Haven Gas Light Co., New Haven, Conn. for the American Gas Association and H. H. Scaff, Ebasco Services, Inc., New York, N. Y. for the Edison Electric Institute has arranged the following tentative program for the three days of the conference:

MONDAY, APRIL 1

Morning—Registration

Afternoon—2:00 to 5:30—General Session
Presiding Officer's Welcome

Addresses by Guest Speakers on

National Fiscal Policies

Effect of Monetary Inflation on Public Utilities

Responsibility of Management to Office Workers

Significant Trends in Current Opinion

TUESDAY, APRIL 2—Group Meetings

Morning—9:30 to 12:00 Noon

1. General Activities Group



E. F. Embree
Chairman
A. G. A. Accounting Section



Leith V. Watkins
Vice-Chairman

Progress Report of E.E.I. Depreciation Committee.

Progress Report of Joint General Accounting Subcommittee on Revisions in Uniform Systems of Accounts.

Important Developments Affecting Taxes.

Significant Recent Decisions by Courts and Commissions.

Joint General Accounting Subcommittee Report on Functional or Cost Accounting for Utilities.

2. Customer Activities Group

Joint Customer Accounting Committee Report on a Billing System Utilizing New Developments in Office Machines.

Joint Customer Collections Committee Report on Collections—Past, Present, and Future.

3. Joint Materials and Supplies Committee
(Agenda to be announced)

Afternoon—2:00 to 5:30

1. General Activities Group

Joint Plant Accounting and Property Records Subcommittee Reports on

Standard Costs

Land and Land Rights

Retirement Units

Joint General Accounting Subcommittee Reports on

Accounting Employee Training
Accounting Machine Developments
General Accounting Methods

2. Customer Activities Group

Leadership from a Practical Viewpoint (Guest Speaker)

Joint Customer Relations Committee Report on A Customer Service Policy.

Report of Special Joint Committee on Customer Activities and Procedures.

3. Joint Materials and Supplies Committee
(Agenda to be announced)

Evening—Dinner Session

"World Government." Speaker to be announced.

WEDNESDAY, APRIL 3—All Day

Individual Committee Meetings
Individual Committee Luncheons

In addition to the above, arrangements are also being made for an exhibit of accounting machines and it is expected that some, if not all of the newly developed equipment, will be exhibited at the conference.

The above tentative program should be of interest to all utility accountants providing as it does guest speakers on subjects of current national importance, group meetings for the presentation of committee reports and talks on pertinent subjects and informal committee meetings and luncheons for the exchange of ideas and discussion on special topics.

An advance notice of the conference and the final program will be mailed to accountants of the two industries. In view of the fact that a large attendance is expected and because of the continued difficulty in securing transportation and hotel accommodations, it is urged that reservations be made promptly.

Indiana Convention

THE Indiana Gas Association will hold its annual convention at French Lick Springs Hotel at French Lick, Indiana, on Thursday and Friday, May 9-10. E. D. Anderson is chairman of the Program Committee for the Association's first full-fledged convention since the war.

The only people who raise any dust are the ones who are going someplace.

New Fire Insurance Classification System

A PROGRESSIVE advance in the history of fire insurance in this country has just been undertaken by capital stock fire insurance companies. After many months of study of the basic information on which the fire insurance business operates, a new system has been developed which will provide fire insurance experience data throughout the nation on a broader, more uniform basis.

Under the new system the statistics in respect to premiums and losses will be kept separately in two classes in the electric and gas businesses, and one in the electric traction business. One class takes in electric generating stations and auxiliary risks. A second class embraces gas plants. A third covers electric traction property including trackless trolleys, but excluding auto busses.

The importance of the new system to the public and the industries concerned is that it will afford an improved statistical foundation for the business judgments of companies in insuring against fire hazards, for the action of state authorities in regulating fire insurance, and for general purposes. The announcement was made by W. E. Mallalieu, General Man-

ager of the National Board of Fire Underwriters.

Since 1932 figures on fire losses and premiums in industries have been kept in a dozen classes. The new system of classifying fire insurance statistics follows generally divisions of the Department of Commerce Index of Business and Industry. Experience data from more than 200 capital stock insurance companies will be kept separately in 65 classes in manufacturing, four in mercantile fields, and twenty in non-manufacturing business establishments, i.e., banks, theaters, garages, warehouses, etc.

One of the chief aims in the public interest is to give a clearer statistical picture of industry's problems of fires and fire insurance than has ever been given before.

The classifications are based upon long experience in the Actuarial Department of the National Board.

The new system divides "experience data" into four general headings—classifications by perils, occupancy, fire protection, and structures or construction.

Residential Gas Section

J. J. QUINN, Chairman

WALLACE M. CHAMBERLAIN, Vice-Chairman

F. W. WILLIAMS, Secretary

1946 Gas Promotion Equipment

THE subject assigned to me is "1946 Gas Promotion and Equipment."

During the last few years the gas industry's biggest problem has been to keep gas in sufficient quantities available to its customers. There has been very little need or opportunity for intensive sales effort. Most of the appliance manufacturers have been engaged in war work, and shortage of materials has caused new appliances to be as scarce as the proverbial hen's teeth. Those few that were available were rationed to people whose needs were such as to enable them to obtain certificates for their purchase.

Home Service Proves Itself

During this time, however, our Home Service Departments have experienced one of their busiest times which indicates clearly the real fundamental value of home service work. That value is to assist our customers to obtain the most from their gas service. Since our most important job is to have customers who are satisfied with the fuel that they are using, and who are obtaining the best possible results from the appliance through which it is being used, although you may not have been conscious of it, your job has continued to be a selling job throughout this period. Although you may have been talking in terms of nutrition and substitute foods, fundamentally you were rendering a service which helped to keep the customers satisfied and enabled them to get the most out of the equipment they had.

The outstanding job which you have done during these past few years has proved conclusively your ability to carry on with the bigger job before us.

During the time that we have been in a seller's market, many have been led to believe that when merchandise is available all merchants will have to fight the customers off from buying their products. This condition may be true for a very short time, but only until merchandise is available in volume, and then we will see the keenest competition ever experienced. If the gas industry is to maintain its present position of leadership in the home fuel market, it must be prepared to outsell competition. By competition I do not mean only competition from other fuels, but also from every other article that is for sale for it is in competition for the customer's dol-

Part of address before Home Service Workshops, American Gas Association, Pittsburgh, Pa., January 31, Feb. 1-2, and Kansas City, Missouri, February 4-6.

BY J. H. WARDEN

Oklahoma Natural Gas Company,
Tulsa, Oklahoma

lar. In other words, unless we are able to make our customers want a New Freedom Gas Kitchen, or a range, or a gas refrigerator, or a water heater, or a new heating installation, more than they want a new radio, automobile, fur coat, or one of the thousands of other things on the market, we are not going to get our share of this customer's dollar.

In discussing our program for the promotion and development of the gas industry, the fact should always be kept in mind that our fundamental business is selling gas, but unlike food, clothing, and other commodities which can be used directly, gas must be used through an appliance, and our customers judge gas as a fuel not by its quality, but by the quality of the appliances they have. Therefore, our major effort must be placed on getting and keeping new and up-to-date appliances in our customers' homes. Our competitors in other fuels are going to be

very active along this same line, and if we do not see that replacements in our customers' homes are made with gas appliances we will lose the business, and I repeat—the only basis on which we can expect our customers to judge our service fairly is by the use of modern appliances.

Age of Gas Ranges

A national survey was made in 1939 which showed that the ages of ranges in our customers' homes were as follows:

1 year or less	18%
2 to 5 years	36%
6 to 10 years	28%
Over 10 years	17%

Since that time, practically no ranges have been sold so that in 1946 seven years can be added to each of these groups. Since people judge the fuel they are using by the appliances through which it is used, what reaction can you expect from a woman who is using a range of 1930 vintage, which, due to a lack of service personnel during the last five years, has been allowed to go down, down, down in its operating efficiency when she sees a modern new competitive type of range advertised. Although she sees the same advertising done for a gas range, she still thinks of the gas range in terms of the appliance that she is using. While I have used the range as an example, the same conditions exist with other gas appliances.

In the refrigeration field, we hold a much more enviable position than our competitors because during the last five years when service was not available, the silent gas refrigerator with no moving parts has proved its real value, and surveys show that an increasing number of people are saying that their next refrigerator will be a gas refrigerator. However, they are not going to come in and buy a refrigerator—they must be sold.

Water heaters offer the home service group such a tremendous opportunity for increasing the use of gas that I am not going to dwell upon it at the present time, but will give it consideration later.

Now that we have shown conclusively that if we are to maintain our position in the gas industry, we must outsell competition, it might be well to devote some time to the tools which we have for doing this job. Personally, I am proud to be associated with an industry that has taken such a tremendous stride during the last few years to maintain its position of leadership in furnishing fuel



J. H. Warden speaking at Kansas City

for the home. Through research, advertising and promotion on a national scale, the industry will be kept out in front, and all of this national activity forms a foundation upon which the individual companies can build.

The background for our program is the New Freedom Gas Kitchen. It gives us a setting in which to display our merchandise, both in actual displays and in the minds of our customers; it enables us to say truthfully that the "Home of Tomorrow" is the "Home of Today" if it's a gas home.

The New Freedom Gas Kitchen is not a specific kitchen, but can be anyone's kitchen. For example, wherever a woman replaces her old coal stove with a gas range, that woman has a New Freedom Gas Kitchen for she has achieved new freedom from the drudgery and dirt of carrying coal and ashes, and all the other inconveniences which she suffered with her old equipment.

This program has enabled us also to obtain the cooperation and assistance of many allied industries, such as cabinet manufacturers, ventilating equipment manufacturers, linoleum manufacturers, glass manufacturers and many

"CP" range is a gas range that has been developed as a result of years of research, study, and planning. It is a range that contains all of the features that numerous surveys have shown women want in their cooking appliance. It gives to the buyer a guarantee of quality that she can obtain with no other appliance. "CP" means to gas ranges what "sterling" means to silver and "Tiffany" to jewelry. To the gas industry and to dealers it gives an opportunity to sell a quality product backed by development and research that gives you an advantage over any other type of equipment.

We can have anything in the way of gadgets and devices on a gas range that it is possible to have on any kind of cooking appliance, but the "CP" range without gadgets is the finest cooking device ever built, and a person needs nothing more to have cooking perfection.

And now we come to that most neglected of all the family children—the automatic gas water heater. This appliance, which brings more satisfaction, convenience, and comfort into the home than any other, has never re-

service, we must sell a hot water service.

There are many advantages of this service in addition to convenience. We have the strongest selling tool in the world for hot water if we will but use it, and that is hot water for health. Many communities have passed ordinances requiring restaurants and other public places to have hot water available for sterilizing dishes, yet people who pay extra money to patronize clean eating establishments pay no attention to the same conditions at home. Again I say that this is because as an industry we have not told the story properly.

During the last few years appliances have been developed which bring the absolute need for hot water to the attention of our customers. These are the automatic dishwasher and automatic home laundry, for without an adequate supply of hot water, these appliances are worthless.

The next member of our appliance family which we have to offer is the gas refrigerator. Unlike the water heater, a tremendous selling job has been done on the mechanical refrigerator. When this appliance first came



Display of model kitchens which was a feature of the Pittsburgh Home Service Workshop

others, for in this program they too see an opportunity to develop their market by tying in with that most modern and convenient fuel—gas.

One feature of the New Freedom Gas Kitchen which makes it outstanding and which offers a tremendous opportunity for our industry is kitchen ventilation. At the time ventilation was first considered, there were some who limited their thinking to the idea that it meant venting the appliances and taking out the products of combustion. However, this is only a minor part of the job of properly ventilating kitchens. It has been found that greases, vapors and cooking odors, as well as heat from cooking, make kitchens uncomfortable and difficult to keep clean, and that with the methods of ventilation that have been developed and proposed in the New Freedom Gas Kitchens, it is possible to eliminate these vapors, greases and odors at their source, and do a better job than has ever been done before.

The next logical question is, "What does the gas industry have to offer the housewife for installation in this New Freedom Gas Kitchen?"

First and foremost is the "CP" gas range, the greatest cooking appliance ever known. I could spend the rest of my allotted time giving you detailed information on what this modern appliance actually is, but briefly we

ceived the attention it deserves. In my estimation it should hold a very close place in the heart of the Home Service Department because it too renders a vital service in the home. Several years ago we ran a line into a territory that had never had utility service before, and among several hundred customers installed ranges, refrigerators, and automatic water heaters. Some time after these installations were made, we made a survey to find out which of the three appliances they liked most and which of the three appliances they would keep if they had to go back to their former methods of keeping house. To our surprise, the answer was the water heater.

Most of these customers stated they had never realized what hot water service really meant in convenience and comfort. If this be true, why is it that such a small percentage of our customers enjoy full automatic hot water service? The answer is obvious—it is simply that we have not sold our customers this appliance. My personal opinion is that the reason we have not sold this appliance is because we have been selling hot water heaters instead of hot water service. It is natural for a woman to want and to value a range or a refrigerator which she uses all the time and realizes their presence rather than an appliance that sets in the corner or in the basement and is never seen or heard. Therefore, if we are to obtain gas sales from hot water

on the market, however, the use of refrigeration for the preservation of food was not a universal custom. In fact, I remember when people would buy ice and wrap it in newspapers and blankets to keep it from melting in their refrigerators. Refrigeration had to be sold and after many tests proved its need, people were educated to this need for refrigeration to preserve food for health. There is no doubt that medical statistics will prove conclusively the effect refrigeration has had on the general health of the nation.

Mechanical refrigeration has public acceptance, and during the last few years when replacement parts, service materials, and manpower were short, the gas refrigerator with no moving parts and silent operation has received a tremendous boost in the minds of the public. We cannot take it for granted that we will obtain our proportion of the business unless we keep these superior qualities before the public at all times. Due to its long life and trouble-free operation, the gas refrigerator can be used as an anchor in the homes of our customers to which other appliances and services can be tied in order to maintain the all-gas home.

No doubt in the future there will be other makes of gas refrigerators on the market and there are many reasons why this is desirable. However, I do not believe that the industry

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Home Service Workshops Win Acclaim



Kathryn Barnes, chairman, Pittsburgh workshop, and H. Briggs, Jr., Equitable Gas Co.

HOME service has completed its job of reconversion. Emerging from the war period with greatly enhanced prestige as a result of an unexcelled job of keeping customers happy during periods of food, labor and equipment shortages, it is ready to take its place as a pillar of sales promotion in the merchandising period now beginning. This fact was made abundantly clear at the Home Service Workshops sponsored last month by the American Gas Association at Pittsburgh and Kansas City, where comprehensive programs were enthusiastically received.

A total of 300 persons attended the two workshops, about evenly divided between the Pittsburgh meeting, January 31, Feb. 1-2, and the Kansas City conference, February 4-6. Sixteen states were represented at the first meeting and nineteen states at the latter. In each case the spontaneous success of the programs brought many compliments to the 1945 and 1946 Home Service Committees.

Kathryn Barnes, Equitable Gas Co., Pittsburgh, was chairman of the Pittsburgh workshop while Colleen Fowler, Kansas City Gas Company, was presiding officer at Kansas City. Greetings were extended to the gather-

ings by B. C. Adams, president, Gas Service Co., Kansas City Gas Co. and Wyandotte County Gas Co., and W. L. Hutcheson, chairman of the Cooperative Sales Committee for the Natural Gas Companies in Pittsburgh. Mr. Hutcheson also presided at the first luncheon meeting.

An inspiring talk entitled "The Blue Flame Is on the March!" was given at the luncheon meeting by H. Carl Wolf, managing director, American Gas Association, who defined the gas industry as being large, dependable, safe, essential and modern. Home service, he said, is compounded of a mixture composed of the home, service, men and women in the kitchen, planning and personnel. Pointing out just how these ingredients combine to make the finished product—service to the customer—was the objective of the workshops, he said.

Keynote of the conferences was set by J. H. Warden, general sales manager, Oklahoma Natural Gas Co., who discussed each of the major gas appliances and its place in the customer's home. Stressing home service sales help, he outlined the promotional plans set up by the A. G. A. Residential Gas Section. A major part of his address is reproduced on accompanying pages in this issue.

Job for Home Service

"A Job for Home Service in 1946" was presented at both workshops by Jessie McQueen, home service counsellor, American Gas Association, who defined it as "a full-time effort of putting over programs for 'CP' ranges, gas refrigerators, water heaters, laundering, equipment and kitchen planning as well as meeting all competitive efforts." In getting ready for a year of promotion, Miss McQueen said, consideration should be given to modernized use of sales floor demonstrations, attendance at training courses, ways of reaching more people, and plans for full publicity.

The first afternoon of each conference was devoted to a discussion of home service cov-

erage. Reports were presented on successful programs of brides' classes, work with young people, contacts with organized club and company groups. Attention was also given to the wide influence of radio and the value of local newspaper articles.

In Pittsburgh, Helen Farrell, Public Service Electric and Gas Co., Newark, and in Kansas City, Vivian Marshall, New Orleans Public Service Co., Inc., outlined a variety of ways to help brides with their home-making problems. Miss Farrell said an audience was attracted through newspaper advertisements, through a registration book in each office, and by use of names taken from social columns in newspapers. The New Orleans series of cooking schools for brides and new home-makers, Miss Marshall stated, is entitled "The Way to His Heart Club."

Educational Work

"Work with young people is most important," stated Anne McManus, East Ohio Gas Co., at the Pittsburgh workshop, who described the equipment demonstrations in the Cleveland public schools. Mrs. Doris Heidrick, Gas Service Co., Wichita, reported on successful educational work through school cafeterias and emphasized the value of work with young people's organizations.

Both Katherine Rathbone, Southern Counties Gas Co., Los Angeles, and Margaret Holloway, Consolidated Gas Electric Light & Power Co. of Baltimore, emphasized the value of work with company groups during the war when personnel turnover was rapid.

The "how and why" and audience evaluation of radio created interesting discussion on both programs. Evelyn Gardiner of Station KDKA, Pittsburgh, told of interesting developments in television and predicted a future for home service in this program. In Kansas City, Julia Hunter, Lone Star Gas Co., where a successful radio program has been carried on for a number of years, explained that audience evaluation was indicated in the mail requests which gave oppor-



More than 100 people attended the Pittsburgh workshop luncheon, pictured here

tunity to fully evaluate the actual response.

Margaret Crooks, Iowa-Illinois Gas & Electric Co., discussed how an adaptation of a successful prewar program with club groups is now being revived through the offer to club presidents of home service talks available for their programs. The subjects available were new trends in kitchen planning, what's new in lighting appliances and cooking, nutrition and meal planning, how to care for modern fabrics.

Newspaper Articles

A speaker outside the gas industry contributed to both the workshops on the subject of newspaper writing. Eloise Davison, director of home economics, Herald Tribune Institute, New York, pointed out that home service is closest to people in the home and has every advantage to keep an "ear to the ground." Mrs. Nell Snead, woman's page editor, Kansas City Star, featured many of the same points. Both speakers explained the hard work of writing; that it needed study and attention to the greatest detail.

Supplementing the newspaper talks at both meetings was an excellent exhibit of gas company newspaper articles prepared by Mary Belle Burnette, Cincinnati Gas & Electric Company. These were mounted on large charts and placed beside similar charts described as "what food editors write themselves." Mrs. Burnette has carried on a successful newspaper column in Cincinnati for several years.

At the Kansas City Workshop, Katherine Goepfinger, Department of Journalism, Ohio State College, indicated that illustrated articles written locally for newspapers headed the list for highest readership with 82 per cent as against 47 per cent for non-illustrated, non-local articles.

"Set the Stage for Home Service and Sales"

This subject was discussed by Harry Swenson, The Peoples Gas Light & Coke Co., and by H. Vinton Potter, director, New Freedom Gas Kitchen Bureau, A. G. A. and G.A.M.A.

Mr. Swenson's paper was reported in full in the February A. G. A. MONTHLY. Both Mr. Swenson and Mr. Potter showed sketches of modernized platforms. At both conferences, Mr. Potter made a most creditable showing of the great amount of material that is available for kitchen planning promotion through the American Gas Association.

Ruth Sheldon, chairman of a subcommittee which has prepared a booklet on "Modern Kitchens for Homemaking Instruction in Schools," outlined the attention being given to changing trends in homemaking instruction. She stated that this booklet, which would serve many needs not only in gas companies but for the schools in each area, would be announced by the American Gas Association about March 15.

At each workshop, city supervisors of home economics were in attendance for these discussions. Lucy McDermott, city supervisor in Pittsburgh and Eleanor Morrison, Michigan Consolidated Gas Co., and former city supervisor in Grand Rapids, led the discussion of various plans for new laboratories. In Kansas City, Anna Hussey, assistant director of homemaking arts in Kansas City, Mo. and Florence Palmer, superintendent of home economics in Kansas City, Kansas, expressed their agreement with Miss Sheldon on new plans. Both of these supervisors indicated appreciation of the service they had received from the home service departments in their areas.

Organization of Home Service

Organization of home service work was given full discussion at the conferences. Ruth Soule, The Brooklyn Union Gas Co., discussing the details of an efficient home service department, outlined the objectives as set up in the Brooklyn company. Her paper appears elsewhere in this issue. In Kansas City, Irene Muntz, Rochester Gas & Electric Co., presented a similar interpretation of what leads to efficiency in the operation of a department.

"Promotion in a One Girl Department" created much interest as discussed in Pittsburgh by Fleta Matson of the Binghamton Gas Works Co. and in Kansas City by

(Continued on page 138)



Colleen Fowler, presiding at the Kansas City workshop



B. C. Adams, president, The Gas Service Co., welcoming the delegates to Kansas City



Part of the audience which took part in the Kansas City Home Service Workshop

Industrial & Commercial Gas Section

HARRY A. SUTTON, Chairman

KARL EMMERLING, Vice-Chairman

MAHLON A. COMBS, Secretary

Gas Center Scores at Metal Show

A MAJORITY of the more than 45,000 visitors to the National Metal Congress and Exposition, Cleveland, stopped to admire the attractive Industrial Gas Center with its unique eye-arresting mechanical gas "flame" during the week of February 4 to 8. This jointly sponsored exhibit of The East Ohio Gas Company and the American Gas Association was the focal point of industrial gas sales engineers, gas equipment manufacturers and editors of the trade magazines of the metal working industry.

Harry A. Sutton, Public Service Electric & Gas Co., Newark, N. J. and Karl Emmerling, The East Ohio Gas Company, Cleveland, chairman and vice-chairman, respectively of the Industrial and Commercial Gas Section, American Gas Association, together with East Ohio and A. G. A. personnel, welcomed visitors from all parts of the country. The exhibit was tastefully done in a blue and white motif with a background of photo enlargements of gas-fired industrial installations flanking an illuminated "trend" chart. In front of this display was a comfortable lounge.

A never-ending stream of visitors filed through Gas Center which was located on one of the main aisles of the exposition hall, where gas men met appliance manufacturers and had the opportunity of sitting in comfort with their customers discussing gas in

industrial heating operations, and technical aspects relating to gas applications.

The miles of aisles in Cleveland's gigantic Public Auditorium were crowded during the entire week with the thousands of interested spectators viewing the hundreds of operating exhibits covering every phase of the metalworking industry. Scattered throughout the three floors of the exhibition area were the operating exhibits of industrial appliance manufacturers, which featured specific applications of gas-fired industrial heating equipment.

In an attractively decorated booth in one of the most prominent locations, the American Gas Furnace Company, Elizabeth, N. J., demonstrated various types of industrial gas burners. There was a unique demonstration which dramatically illustrated the principle of high-speed gas heating in which need flames were impinged on a small part. This principle was described with such clarity by P. C. Osterman, president, that it was easy to visualize its application to a variety of industrial uses.

Newcomer in the industrial heating field, Bryant Heater Company, Cleveland, had an operating gas-fired burner illustrating typical gas combustion equipment. One exhibit, the Flowmixer, is a device which utilizes a stream of air at several pounds'

pressure to entrain combustible gas and deliver the mixture at unusually high pressure at the burner. Great interest was exhibited by the many visitors to this exhibit, and the Bryant Company is to be congratulated on the fine showing it made in this first presentation of gas-fired industrial burners. D. A. Campbell, manager, industrial division, was in charge of the exhibit.

High-speed paint drying in a convection oven was demonstrated by the Dispatch Oven Company, Minneapolis, with the use of small metal trays. The process demonstrated started with dipping trays in paint of various colors, then they were transferred to an electrostatic detearing unit and on to a conveyor which carried them through a gas-fired convected air oven, coming out completely dry. The entire operation from start to finish was concluded in a matter of minutes. F. H. Faber and others were in attendance at the exhibit.

The feature of the presentation of the Gas Appliance Service Inc., Chicago, as demonstrated by E. A. Furkert, was an automatic gas-fired machine for continuous production line silver soldering. In addition some of the firm's other gas-fired specialties on view included, Rapidry air heaters for convection ovens, the Midget utility furnace, and a gas-fired gear-treating



American Gas Association—East Ohio Gas Co. exhibit at the National Metal Exposition. Note gas flame motif which attracted visitors



Frederic O. Hess, president, Selas Corp. of America, and Carl Wierum, The Brooklyn Union Gas Co., at the Industrial Gas Center

machine for flame hardening.

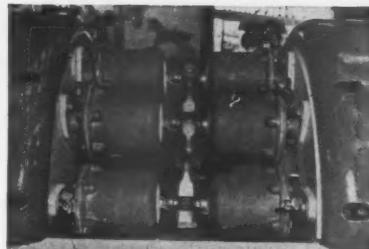
Being a local organization The Gas Machinery Company, Cleveland, took advantage of proximity to the exhibition hall to have hourly trips to the factory where an atmosphere-controlled roller hearth furnace was set up to demonstrate silicon carbide radiant burner tubes capable of developing temperatures up to 2500 deg. Trip after trip was arranged by Mr. Harmon at the exhibit to accommodate the many visitors, prospects and customers who wished to see that particular type of equipment under actual operating conditions, demonstrated by Ken Stookey.

Among the many pieces of gas-fired industrial heating equipment in the large exhibit of the Lindberg Engineering Co., St. Louis, was a new gas cracking unit. According to Bob Aitcheson, this gas-fired apparatus is used to make precision controlled atmospheres for various types of heat treating. The Lindberg engineers claim that by it atmospheres may be controlled to within very limited tolerances.

North American Manufacturing Co. of Cleveland was showing for the first time a new nozzle mix aspirated burner for industrial furnaces. The salient point of this burner is that it can be used within a wide range of B.t.u. input yet maintaining a constant air-gas ratio.

A completely automatic gas-fired flame hardening machine attracted widespread attention at the exhibit of Selas Corporation of America, Philadelphia. For purposes of demonstration, ball peen hammer heads were flame hardened by a series of gas flames in 17 seconds and then automatically carried through a quench. Occupying the balance of this exhibit space were various types of gas-fired industrial and radiant gas-fired ceramic burners. Frederic O. Hess, president, and others were in attendance.

Tate-Jones & Co., Inc., Pittsburgh, had a reception center for customers and prospects on one of the main aisles of the exhibition hall where, under soft lights, visitors could be seated in comfort for discussion of engi-



American Gas Furnace Co. exhibit demonstrating the principle of high speed direct heating with gas



Automatic Flame hardening machine exhibited at the show by Selas Corporation of America

neering and technical problems. This company manufactures furnaces for all types of industrial heating with gas. Pot furnaces and gas burners for diversified applications are also among its many products.

The National Metal Congress and Exposition was the largest ever held by the American Society for Metals. Many wartime secrets were revealed for the first time by a number of exhibitors. It was striking to note that much emphasis was laid on the possibilities of the light metal alloys, particularly aluminum and magnesium alloys. New stainless steels of super alloys for jet engines were also given prominent place and new

fields for chrome were demonstrated which promised new markets in the chemical, mining, petroleum and rubber industries. New equipment to enhance production in the metalworking industry was shown for the first time.

New equipment, new processes, new applications of old ideas present a vista for the increased use of gas in industry where heat is the principal part of processing. Industrial gas sales engineers are cognizant of the opportunities offered in their field, and they will be the cogs in the wheel that will perpetuate the gas industry slogan—The Trend Continues to GAS.

Toledo Conference Program Headliners

THE Commodore Perry Hotel, Toledo, will be the scene of the A. G. A. Conference on Industrial and Commercial Gas, Friday and Saturday, March 29 and 30.

Harry A. Sutton, chairman, Industrial and Commercial Gas Section, American Gas Association, announces the tentative program for the two-day conference as prepared by Ralph S. Wenner and his committee. A full rounded program that will appeal to all gas men and give them an incentive to develop the opportunities for future expansion in the industrial and commercial gas fields will be presented in three general sessions and specialty meetings with an industrial gas panel and commercial gas panel.

Highlighting the conference will be the addresses at the luncheon sessions, one by Grove Patterson, editor of *The Toledo Blade*, and the other by E. J. Boothby, president, American Gas Association.

Subjects on the program of the conference together with the speakers follow:

The Growing Use and Sales Importance of Prepared Atmospheres—E. G. deCoriolis, Surface Combustion Corp., Toledo.

Water Heaters and Steam Boilers—Load Builders for Commercial Gas—O. M. Olsen, Sellers Engineering Co., Chicago.

Advertising Paves the Way—J. P. Leinroth, Chairman, Industrial and Commercial National Advertising Committee.

The Cooking Problem Involved in the Expanding Public School Feeding Program—Margaret Crozier, Manager, School Cafeterias, School District of Philadelphia.

Your Opportunity as Industrial and Commercial Sales Engineers—Franklin T. Rainey, The Ohio Fuel Gas Co., Columbus, Ohio.

Building Prestige and Sales in the Commercial Market—Leon Ourusoff, Chairman, Food Service Equipment Committee, Washington Gas Light Co., Washington, D. C.

Protection Equipment on Gas Ovens—C. George Segeler, American Gas Association. Practical Phases of Applying High Speed Direct Gas Heating—Frederic O. Hess, Selas Corp. of America, Philadelphia.

Something New—Interruptible Quenching—C. H. Lekberg, Northern Indiana Public Service Co., Hammond, Ind.

Heating by Immersion and Submerged Combustion—Charles C. Eales, The Ohio Fuel Gas Company, Toledo.

Indirect Heating Moves Up Into the High Temperature Bracket—Ken W. Stookey, The Gas Machinery Co., Cleveland.

Where Do Gas-Oil Burners Fit In?—Otto Lutherer, The North American Mfg. Co., Cleveland.

We Must Get the Small Tailor Boiler Load—Harry B. Wilson, The Brooklyn Union Gas Company, Brooklyn, N. Y.

Prepare for the Scramble for the Customer's Dollar.

Heat Operations in the Plastics Industry. A New Type Gas-Fired Brass Melter. Are Your Retail Bake Shops Gas-Fired? The Church Kitchen as a Market for Gas.

This is the Industrial and Commercial Gas Section event of the year, and a large attendance is expected at the first postwar conference where all can learn What's Doin' in Industrial Gas and Commercial Gas.



D.A. Campbell, Bryant industrial manager, and L.C. Harvey, president of Bryant and G.A.M.A.



Dr. George B. Waterhouse, professor emeritus, M.I.T., addressing the breakfast



E. L. Shaner, editor-in-chief, "Steel," whose pertinent remarks appear in full on page 95

facilities. He informed his listeners that here in the United States there was an acute demand for 100,000 technically trained men to help refill the depleted reservoir of technical knowledge.

In conclusion, Mr. Shaner left the breakfast guests with the thought that in addition to pursuing our responsibilities in the technical fields, we should give serious consideration to our responsibilities as citizens. His remarks are reproduced in full elsewhere in this issue.

Immediately following the breakfast, meetings of the Committee on Heat Treating and Finishing with Gas and the Non-Ferrous Metals Committee were held under the leadership of Charles C. Eeles, The Ohio Fuel Gas Company, Toledo and C. George Segeler, American Gas Association, respective chairmen of the committees. These two committees are most active in developing and promoting the use of gas in industrial processing to further better products.

Industrial Gas Breakfast Upholds Tradition At Metal Exposition

PROMPTLY at 8:30 A.M., February 6 at the Hollenden Hotel, Cleveland, some 150 gas men sat down with 15 editors and representatives of the leading metals magazines at the traditional Industrial Gas Breakfast which has for nine years been a regular feature during National Metal Expositions.

The breakfast was presided over by Harry A. Sutton, Public Service Electric & Gas Co., Newark, N. J., chairman of the Industrial and Commercial Gas Section, American Gas Association. When the festivities were over, the guests sat back and listened to two inspiring talks on current topics relating to the metalworking industry.

The first talk was given by Dr. George B. Waterhouse, Professor Emeritus of Metallurgy, Massachusetts Institute of Technology. As past president of the American Society for Metals, he welcomed the guests on behalf of the National Metal Congress. In his talk, Dr.

Waterhouse traced the history of the use of gas in steel making from early English open hearths up to the present time. He also described the many uses of gas in the various phases of steel processing operations, hardening, tempering, carburizing, nitriding and other applications using special atmospheres.

Following Dr. Waterhouse, Mr. Sutton next introduced E. L. Shaner, Editor-in-Chief of STEEL. This well-known engineer and publisher gave the assembled guests a short background of the achievements in metallurgy, and suggested the new environment in which metallurgists will be working during the post-war period. He paid tribute to the contributions that metallurgists made to the war effort and how those contributions would auger to the benefit of industry now.

Mr. Shaner continued with the assertion that one of the essentials of industry was to establish new, and expand present research

Non-Ferrous Committee Chairman Appointed

HARRY A. SUTTON, chairman, Industrial and Commercial Gas Section, American Gas Association, announces the appointment of C. George Segeler as chairman of the Non-Ferrous Metals Committee. Mr. Segeler is utilization engineer of the American Gas Association and has spent many years in exhaustive investigations in the field of non-ferrous metals.

A predecessor committee, the Aluminum and Magnesium Melting Committee of which Mr. Segeler was chairman, has had its scope broadened to include aluminum, magnesium, brasses and bronzes, and will function under the new title.

Objectives of the committee for the coming year will include studies on melting practices and heat-treating processes to evolve the most efficient procedures through the use of gas-fired equipment. Some activities of the former committee are still to be completed and will be carried on under the Non-Ferrous Metals Committee.



The Industrial Gas Breakfast Meeting held in conjunction with the National Metal Congress, Cleveland, February 6

gas grapevine



a quick peek at the program for the industrial and commercial gas conference kinda takes one's breath away with the headliners ralph wenner and his committee have lined up. there's a formal announcement elsewhere in this issue, look it over. the date is friday and saturday, march 29 and 30, commodore perry hotel, toledo.

better figure on being away from home most of the week, 'cause the national restaurant exposition will be on march 26, 27, and 28 at the hotel stevens, chicago. the "commercial gas cooking center," your a.g.a. exhibit will be the place to hang your hat and meet your fellow gas men as well as the commercial cooking appliance manufacturers.

the national metal congress and exposition in cleveland, february 4 to 8, was something to behold. over 45,000 interested visitors tramped all over the gigantic public auditorium and many a hardy soul was foot-sore and leg-weary by the time friday night arrived, but they had been rewarded by the biggest and best show ever put on by the a.s.m.

we can't just let the above item stand without a word about "the industrial gas center" (see story on the page ahead). this was a most attractive booth, with its comfortable lounges and a beacon in the form of a mechanical gas flame. such favorable comment came from passers-by, that you may see this flame at future a.g.a. exhibits. ye scribe has heard hints that it will be a part of his baggage to take around to other events—it's that good!

the annual industrial gas breakfast was a revelation to ye scribe. he marveled at the good fellowship between gas men, manufacturers and metals magazine editors. that's as it should be, and if we may predict, it promises big business in these times ahead. with so much understanding and cooperation nobody can lose.

see you in chicago and toledo. a. q. s.

Restaurant Exposition To Have Gas Center

THE American Gas Association will have the Commercial Gas Cooking Center as its exhibit at the National Restaurant Association's 27th Annual Exposition, March 26, 27 and 28 at the Hotel Stevens, Chicago.

Situated near exhibitors of commercial cooking and baking equipment, the A. G. A. location will provide a convenient meeting place for gas men, equipment manufacturers and customers to discuss the latest in gas-fired cooking equipment.

AMERICAN GAS ASSOCIATION INDUSTRIAL AND COMMERCIAL GAS

ADVERTISING FOR MARCH

GENERAL MANUFACTURING

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *Business Week* (March 9)

Industrial *GAS* Air Conditioning is benefiting these and other industries.

Modern Industry

At country's largest magnesium fabricating plant Revere Copper and Brass Incorporated uses *GAS* for melting. *Industrial Heating*

One of the many advantages of *GAS* and Modern *GAS* Equipment—Economy. *Factory Management & Maintenance*

METALS INDUSTRY

One of the many advantages of *GAS* and Modern *GAS* Equipment—Speed. *Foundry*

Materials and Methods

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *The Iron Age* (March 7)

One of the many advantages of *GAS* and Modern *GAS* Equipment—Economy. *Metal Progress*

Revere Copper and Brass Incorporated uses *GAS* extensively at the Halethorpe Extrusion Plant, Baltimore in Magnesium and Aluminum fabrication. *Steel* (March 4)

TECHNICAL COLLEGE PUBLICATIONS

One of the many advantages of *GAS* and Modern *GAS* Equipment—Speed. *32 Engineering College Magazines*

CERAMIC INDUSTRY

One of the many advantages of *GAS* and Modern *GAS* Equipment—Economy. *Ceramic Industry*

GLASS INDUSTRY

At Bausch & Lomb *GAS* and Glass join in Victory and Peace. *Glass Industry*

CHEMICAL FIELD

One of the many advantages of *GAS* and Modern *GAS* Equipment—Speed. *Chemical & Metallurgical Engineering*

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *Chemical & Engineering News* (March 10)

TEXTILE FIELD

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *Textile World*

HOTEL AND RESTAURANT FIELD

At Southern Tavern, Cleveland—*GAS* equipment demonstrates its flexibility and functional superiority. *American Restaurant*

One of the many advantages of *GAS* and Modern *GAS* Equipment—Economy. *Hotel Management*

For over 45 years Wilcox's Pier Restaurant has found *GAS* the best kitchen fuel. *Restaurant Management*

One of the many advantages of *GAS* and Modern *GAS* Equipment—Speed. *Institutions*

SCHOOL FIELD

For all heavy-duty hot water requirements specify *GAS* equipment—for speed—economy—volume—complete automatic control. *Nation's Schools*

HOSPITAL FIELD

One of the many advantages of *GAS* and modern *GAS* equipment—flexibility. *Modern Hospital*

FOOD PROCESSING

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *Food Industries*

BAKING FIELD

One of the many advantages of *GAS* and Modern *GAS* Equipment—precise, easy and inexpensive controllability. *Bakers' Helper* (March 23) *Bakers Weekly* (March 4)

FOUNTAIN AND RESTAURANT FIELD

One of the many advantages of *GAS* and Modern *GAS* Equipment—Speed. *Chain Store Age* (Fountain-Restaurant Section)

NEWSPAPERS, PUBLISHERS, ETC.

Pittsburgh's Three Great Dailies use *GAS* extensively in Stereotype Operations. *Editor and Publisher* (March 9)

Technical Section

LESTER J. ECK, Chairman

C. S. GOLDSMITH, Vice-Chairman

A. GORDON KING, Secretary

Distribution and Motor Conferences Set

RETURNING to full-fledged peacetime meetings, the Technical Section of the American Gas Association will hold its twenty-second annual Distribution Conference, combined with a Conference on Operation of Public Utility Motor Vehicles on April 15-17 at the Stevens Hotel, Chicago.

It will be the first such three-day conference since 1942. Last year, because of travel restrictions and pressure of war work, no conference was held. Consequently, not only will this meeting have much lost ground to cover but it will also face an entirely new set of conditions than existed prior to the war. Attendance is particularly important in



T. H. Kendall
Chairman
Distribution Committee



J. H. Collins
Vice-Chairman
Distribution Committee

view of the "off-the-record" discussions as well as the new developments which will play a prominent part in the program.

The program committees headed by Chairman T. H. Kendall, Equitable Gas Co., Pittsburgh, and Vice-Chairman J. H. Collins, New Orleans Public Service Inc., of the Distribution Committee and Chairman S. G. Page, Equitable Auto Co., Pittsburgh, and Vice-Chairman B. D. Connor, Boston Consolidated Gas Co., of the Motor Vehicles Committee, are offering a comprehensive program flexible enough to include all the latest developments.

Special emphasis is being placed on the series of luncheon conferences at which a wide variety of subjects will be discussed. Since no record will be made of this phase of the meetings, attendance is necessary to benefit from them.

Following is the tentative program for each group:

MONDAY—10:00 A.M.

Joint Session

Opening Remarks

T. H. Kendall, Chairman—Distribution Committee, Pittsburgh, Pa.

Address of Welcome

A Message from the Association

E. J. Boothby, President, American Gas Association

Distribution—A Vital Link

H. Carl Wolf, Managing Director, American Gas Association

Mobile Radiotelephone Service,—Present and Future Plans

S. S. Brodsky, Service Manager, Chicago Area, Illinois Bell Telephone Company

Emergency FM Radio Communication

J. P. Woodward and W. R. McMillan, Union Electric Co. of Missouri, St. Louis, Mo.

12:30 P.M.

MOTOR VEHICLE ROUND TABLE LUNCHEON CONFERENCE

S. G. Page, Chairman, Motor Vehicle Committee

Motor Vehicle Problems

Linn Edsall, Chairman, Philadelphia Electric Co., Philadelphia, Pa.

DISTRIBUTION ROUND TABLE LUNCHEON CONFERENCES

J. H. Collins, Vice-Chairman, Distribution Committee, and Chairman, Luncheon Conferences Committee

Meters and Metering

A. V. Brashear, Chairman, Michigan Consolidated Gas Co., Detroit, Mich.

Construction and Maintenance

E. L. Henderson, Chairman, United Gas Corporation, Houston, Texas.

TUESDAY—9:30 A.M.

Joint Session

Opening Remarks

S. G. Page, Chairman—Motor Vehicle Committee, Pittsburgh, Pa.

Air Compressor Tools—Their Maintenance and Repair

B. D. Connor, Vice-Chairman, Motor Vehicle Committee, Boston, Mass.

Standardization of Motor Truck Bodies

Sidney F. Gale, Chairman, New Orleans, La.

Safety Programs

An informative presentation is planned by the Accident Prevention Committee of the Association

Motion Picture—"Gas"

A technicolor sound film, showing construction over difficult terrain of the longest large diameter gas pipeline in the world. The 24" line shown was constructed as a vital war project from Corpus Christi, Texas, to Cornwell, West Virginia, 1,265 miles in the record time of 292 days.

12:30 P.M.

MOTOR VEHICLE ROUND TABLE LUNCHEON CONFERENCE

S. G. Page, Chairman, Motor Vehicle Committee



B. D. Connor and S. G. Paige, Vice-Chairman and Chairman, respectively, of the Motor Vehicle Committee

Motor Vehicle Problems

E. W. Jahn, Chairman, Consolidated Gas Electric Light & Power Co. of Baltimore, Md.

DISTRIBUTION ROUND TABLE LUNCHEON CONFERENCES

J. H. Collins, Vice-Chairman, Distribution Committee and Chairman, Luncheon Conferences Committee

Work on Customers' Premises

J. M. Pickford, Chairman, Northern Indiana Public Service Co., Hammond, Ind.

Pipe Coatings and Corrosion

R. F. Hadley, Chairman, Susquehanna Pipe Line Co., Philadelphia, Pa.

WEDNESDAY—10:00 A.M.

DISTRIBUTION CONFERENCE SESSION

T. H. Kendall, Chairman, Distribution Committee, Presiding

Sacrificial Anodes

Dr. Kent M. Wight, Research Associate,
American Gas Association

Automatic Loading of District Governors

W. J. Woolfenden, Engr. of Distribution
Design, Michigan Consolidated Gas Com-
pany, Detroit, Michigan

Supervisors' Part in Industrial Relations

E. O. Keller, Training Supervisor, Phila-
delphia Company, Pittsburgh, Pa.

Discussion

WEDNESDAY—2:00 P.M.

DISTRIBUTION CONFERENCE SESSION

J. H. Collins, Vice-Chairman, Distribution
Committee, Presiding

Reports of Luncheon Conference Off-the-
Record Discussion, and Committee Devel-
opments

Safety

L. K. Richey, Chairman, Michigan Con-
solidated Gas Co., Detroit, Michigan

Construction and Maintenance

E. L. Henderson, Chairman, United Gas
Corporation, Houston, Texas

Meters and Metering

A. V. Brashear, Chairman, Michigan Con-
solidated Gas Co., Detroit, Michigan

PIPE COATINGS AND CORROSION

R. F. Hadley, Chairman, Susquehanna Pipe
Line Co., Philadelphia, Pa.

Work on Customers' Premises

J. M. Pickford, Chairman, Northern Indiana
Public Service Co., Hammond, Ind.

Open Forum

Gas Analysis Book

In Demand

Since announcement of its publication a few weeks ago, the A.G.A.-sponsored book "Gas Analysis & Testing of Gaseous Materials" by V. J. Altieri, chief chemist of Eastern Gas and Fuel Associates, Boston, has been in great demand. While a large number of copies has already been sold there is still a supply available.

Containing a wealth of information on gas analysis subjects, it constitutes a comprehensive book of standards for sampling, analyzing and testing gases and gas mixtures containing varying amounts of liquids and solid dispersoids. Included is a summary of technical literature and much hitherto unpublished data obtained by contemporary workers in many scientific and technologic fields.

It is a 560-page book, handsomely bound in cloth, and has been endorsed by the Chemical Committee of the American Gas Association. Copies sell for \$5.00 to A.G.A. members; \$7.50 to others. All orders should be addressed to the Association at 420 Lexington Ave., New York 17, N.Y.

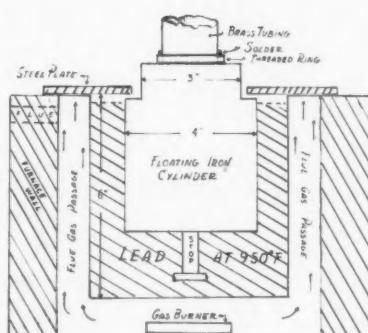
New Gas Equipment Gives Localized Heat For Soldering at Low Cost

AN ingenious method of providing localized heat for soldering operations has been devised by Royal E. Hunt, industrial sales engineer, The Brooklyn Union Gas Company, for one of the company's customers who manufactures plumbing supplies. The method involves conduction heating, but it has the advantages of induction heating and is achieved at a small fraction of the latter's cost.

The customer wanted a method of soldering threaded rings onto the end of brass tubing without heating the tubing sufficiently to cause discoloration. Mr. Hunt solved the problem by floating cast iron cylinders in molten lead and then bringing the work to be soldered in contact with the hot iron cylinders.

The accompanying sketch shows diagrammatically how the floating cylinder is kept in place. It was found that within 30 seconds enough heat passed into the ring and end of the tubing to melt the solder which had previously been placed in position and to effect a perfect job.

Although the sketch shows only one iron float, actually Mr. Hunt placed ten of them in one standard gas-fired lead melting furnace,



so ten pieces of work can be soldered simultaneously in 30 seconds. The customer is now developing a machine which will place the ten pieces of work in position, hold them there the required 30 seconds, and then remove them finished.

Chief advantages of the new method are the low cost of equipment and that many pieces can be done simultaneously. Other advantages are speed, cleanliness and the fact that the floating heating surfaces make for perfect alignment.

Helium Output

PRIOR to his resignation last month, Secretary of the Interior Harold L. Ickes, who in 1938 turned down Nazi Germany's application to buy 10,000,000 cubic feet of helium from this country, revealed that the United States produced more than 37 times that volume of the valuable nonflammable and nonexplosive gas in the five years before the Japanese surrender.

Disclosing figures on helium production for the first time since Pearl Harbor, Mr. Ickes said that the Bureau of Mines plants in the last five fiscal years produced 370,787,000 cubic feet of helium, or enough to inflate more than 600 patrol and scout blimps of the largest and latest type used by the Navy to wage war on Nazi submarines in the Atlantic.

Tar Bases Featured In Koppers Exhibit

TAR bases or pridine bases which are coming into greater prominence, and in which there have been great advances in recent years, were featured in the exhibit of Koppers Company, Inc., at the Exposition of the Chemical Industries (Grand Central Palace, New York, Feb. 25 to March 2, 1946). These included pyridine, alpha picoline, mixed picolines, 2, 4, lutine, quinoline, wider-boiling fractions of tar bases both above and below quinoline and isoquinoline.

Illustrations at the exhibit showed the uses of these bases in the manufacture of vitamins, medicinals, and waterproofing agents for textiles; as solvents; as copolymerizing materials for synthetic rubber; and as inhibitors for steel mill pickling compounds. Samples of all the bases which are in commercial production were shown. Copies of a new booklet by Dr. G. D. Bieber, of Koppers entitled "The Utilization of Tar Bases" were distributed.

JOINT
PRODUCTION AND
CHEMICAL COMMITTEE
CONFERENCE
MONDAY, TUESDAY, WEDNESDAY
JUNE 3, 4, 5
Hotel Pennsylvania
New York, N. Y.



Laboratories

GEORGE E. WHITWELL, Chairman
R. M. CONNER, Director

War Service Praised

THE following quotation from a letter from Dr. Vannevar Bush, Director of the Office of Scientific Research and Development, to R. M. Conner, calls attention to the outstanding contribution of American science and industry to the winning of the war and commends the work of the Laboratories:

"This letter gives me the pleasure of expressing to you my personal and official appreciation and commendation of the aid that the American Gas Association, as a corporation, has given in the war effort through the work which it has performed under contract with this Office. The American Gas Association was called upon to do important work. That work was well done."

"We need no longer recall the difficulties which were encountered, nor the obstacles which had to be overcome. Rather we should and do remember the whole-hearted cooperation which served to overcome them. Our greatest assurance for the future lies in the continuance of that same spirit."

New Research Cover Adopted

THREE new research bulletins issued prior to the Technical Conference on Domestic Gas Research in Cleveland last month made their appearance in a new dress which has been adopted for these publications. Major change occurs in the cover which features a bird's eye view of a spreading, fluted-like gas flame appearing in a color panel over the legend "Domestic Gas Research." The flame is repeated in black and white on the title page. Other typographical changes have been made for appearance and better readability.

The new bulletins are: No. 38—Fundamental Data for Design of Totally Aerated Atmospheric Gas Burners, No. 39—Fundamentals of Heat Absorption by Utensils in Gas Range Ovens, and No. 40—A Study of Various Methods of Kitchen Ventilation.

Requirements Activities

APPROVAL Requirements Subcommittees for Domestic Ranges, Hotel and Restaurant Ranges, and Water Heaters met at the Laboratories recently to consider additions and changes in requirements.

The range group initiated refinements for a new wall temperature test board to accommodate flush-to-wall models and authorized formation of a subgroup to prepare individual requirements for combination and bunga low-type ranges.

The Hotel Range Subcommittee reviewed comments from the industry on proposed revisions to requirements for hotel ranges and deep fat fryers. The water heater group recommended a new draw-off test to insure delivery of an adequate supply of hot water by automatic storage system. All requirements changes will be considered by the Approval Requirements Committee at its March meeting.

The Central Heating Requirements Committee is scheduled to meet March 14 at the Laboratories. The semi-rigid tubing and fittings group will meet in Chicago on April 15.

Appointed Laboratories' Assistant Director

APPOINTMENT of K. R. Knapp as assistant director of the American Gas Association Testing Laboratories has been announced by R. M. Conner, director. In his new position, in addition to his former duties, he will have charge in the director's absence of all activities at both the Cleveland and Los Angeles Laboratories.

In making this announcement, Mr. Conner pointed out that in June of this year Mr. Knapp will complete 35 years of continuous service in the industry. During about one-half of this time he was associated with a utility company and the balance with the Laboratories.

Mr. Knapp joined the Laboratories' staff on July 1, 1929 to take charge of the newly organized program of pipe joint research, which he directed until its conclusion. In 1930 he was appointed chief engineer, holding this position continuously until his present promotion.

Immediately following graduation from the University of Pennsylvania in 1911 with a degree of B.S. in Chemical Engineering, Mr. Knapp entered the employ of The United Gas Improvement Company as a cadet engineer

in the distribution department of The Philadelphia Gas Works Company. He remained with this company and its affiliates for the next 18 years. For practically the entire time he was engaged in distribution and utilization activities in various supervisory capacities in Philadelphia. At the time of his resignation in 1929 to join the Laboratories he was conducting distribution research as a member of the staff of the gas operating department.

Joan Huck Addresses Conference



Joan Huck

JOAN HUCK, author of the article on correction of baking failures on page 113, also gave a technical paper on the subject at the recent Technical Conference. Miss Huck is the first woman to make such a presentation. She has performed an outstanding job in research at the Laboratories.

In addition to domestic gas research studies, she has conducted extensive experiments in mixed gas research and is author of the new bulletin on this subject now being published. She spoke briefly at the recent Regional Home Service Workshop meeting at Pittsburgh and has addressed several college home economic groups on research as a vocation. Miss Huck is a graduate of Ohio University where she majored in home economics.

Pipeline Mileage

AT the end of 1945 the total length of natural gas pipelines and natural gas city mains throughout the United States had risen to 218,440 miles, enough to girdle the globe nearly nine times. There is nothing even remotely comparable to this huge mileage of gas pipelines anywhere else in the world.

—The Lamp

Bryant Gas Heating Book

BRYANT Heater Co., gas heating equipment manufacturers, Cleveland, is distributing a 42-page spiral-bound brochure, "Town of Tomorrow," reviewing various styles of American architecture and containing examples of homes suggested by experienced builders as bestsellers when home building is again prevalent.



K. R. Knapp

Personal and Otherwise

United Gas Appointments

FILLING of several key positions in the United Gas organization by promotion of veteran officials was announced recently by N. C. McGowen, president of the United Gas Companies.

L. V. Tracht, assistant secretary and treasurer of the operating division of United Gas Corporation in Houston, a veteran of more than 20 years in the utility field, has been appointed treasurer of the United Gas Corporation and associated companies. He will be transferred from Houston to the headquarters offices at Shreveport.

R. E. Hull, auditor of the United Gas Pipe Line Company, has been appointed comptroller of United Gas Corporation and Associated companies.

Other changes announced by Mr. McGowen move well-known United Gas officials into more important positions. J. H. Miracle has been appointed secretary of United Gas Corporation and associated companies. F. E. Waltrip becomes general auditor of United Gas Corporation and associated companies. H. W. Egger has been named superintendent of compressor stations to succeed A. L. Bradford, recently retired after long service.

M. V. Cousins has been appointed director of personnel, a reorganized department to include personnel, insurance and safety departments and publication of the United Gas Log. D. R. Pflug has been made assistant chief engineer of United Gas Pipe Line Company, succeeding W. J. Parkes, retired. H. W. Eisen has been appointed superintendent of transportation of United Gas Pipe Line Company, Union Producing Company and United Oil Pipe Line Company, a newly created department to include automotive as well as all other forms of transportation.

Hoenigmann Resigns from Cribben and Sexton Co.

GEORGE D. WILKINSON, president of Cribben and Sexton Company has announced the resignation of F. J. Hoenigmann, executive vice-president and general manager.

"The benefits of his experience and guidance have had a far-reaching good effect upon our organization; and it is with regret that I must announce this termination," Mr. Wilkinson stated.

Mr. Hoenigmann who is a graduate engi-

nier of the University of California, Class of 1916, served in World War I as a First Lieutenant and Aide-de-Camp to General Hugh S. ("Iron Pants") Johnson. After the war he went with General Johnson to the Moline Plow Company, Moline, Illinois, where, during ten years of service in various positions he became general superintendent and works manager.

In 1930, Mr. Hoenigmann became identified with the gas industry when he went to Cribben and Sexton Company, as sales manager. In 1940, he was made vice-president and general manager.

Mr. Hoenigmann is chairman of the Domestic Gas Range Division of G.A.M.A. and a director of the Gas Appliance Manufacturers Association.

Rockwell Appoints Kerr

A. J. KERR, formerly general sales manager, has been elected vice-president of sales of the Rockwell Manufacturing Company, Pittsburgh, Colonel Willard F. Rockwell, president and chairman, has announced.

Mr. Kerr has been associated with the company for more than 20 years. His early career was as district manager, Tulsa office of the Pittsburgh Equitable Meter and Nordstrom Valve Companies, now divisions of the Rockwell Manufacturing Company. In 1944 he was made general sales manager.

Severson Heads New York and Canadian Companies



S. B. Severson

S. B. SEVERSON, formerly vice-president and general manager of the Republic Light, Heat & Power Co., Inc., and the Dominion Natural Gas Company, Ltd., was elected president and general manager of those companies at meetings of the directors in Buffalo, and Brantford, Ontario, Jan. 23.

John R. Reeves, general superintendent of the Dominion Natural Gas Company, Ltd., was elected vice-president of that company to succeed Mr. Severson.

Mr. Severson has been an executive of prominent water, oil, gas, and electric companies in the United States and Canada since his graduation from the University of Wisconsin in 1907. He has been vice-president of the Republic Light, Heat & Power Co., Inc., and the Dominion Natural Gas Company, Ltd., since 1924.

He is first vice-president and director of the Natural Gas & Petroleum Association of Canada, vice-president and director of the United Fuel Investments, Ltd., Hamilton, and has been prominent in the affairs of the Canadian Gas Association for years. He is a member of the Buffalo Athletic Club and the Greater Buffalo Advertising Club.



President Herman Russell of Rochester Gas and Electric Corporation presents Vice-President Alexander M. Beebee with degree of "Doctor of Gasleste Science" at dinner commemorating latter's thirtieth anniversary

A. M. Beebee Honored

VICE-PRESIDENT Alexander M. Beebee of Rochester Gas and Electric Corporation was given a degree of "Doctor of Gasleste Science" at a recent dinner tendered by fellow workers to commemorate his thirtieth anniversary with the company.

Mr. Beebee became associated with the R. G. & E. immediately after his graduation from Cornell and rose from the ranks to the post of vice-president in charge of all gas operations. A mock ceremonial preceded the presentation with President Herman Russell, as head of "R. G. & E. College," doing the honors. In the citation many of Mr. Beebee's activities and mannerisms were humorously touched upon.

British Institution Honors Major Forward



Major Forward

MAJOR ALEXANDER FORWARD, who retired last October after 22 years as managing director of the American Gas Association, has been elected an honorary member of The Institution of Gas Engineers, London. While there are other active American members of this highly respected British organization, Major Forward is the only American who has received this unusual distinction.

Honorary membership was voted unanimously "as a mark of appreciation of outstanding services to the gas industry during these past 22 years and of ever-ready cooperation with the work of this Institution, not least in connection with the memorable visit of our members to America in 1933."

Major Forward also is the only honorary member of the American Gas Association.

Richards Elected President of Harrisburg Gas Company



Leonard B. Richards

AT a meeting of the board of directors of The Harrisburg Gas Co. held January 25, Leonard B. Richards was elected president and a member of the board of directors.

Following his graduation in Mechanical Engineering at Cornell University, 1926, he was employed by The United Gas Improvement Co. and assigned to The Harrisburg Gas Co. as engineering assistant. In 1927 he was transferred to the general offices of the Connecticut Light and Power Co. at Waterbury, and later became gas engi-

neer in the Eastern Connecticut Power Co. which became the eastern division of Connecticut Light and Power Co. at Putnam. This assignment also included supervision of gas operations in Danielson, Willimantic and Rockville.

In 1937 Mr. Richards became assistant operating manager, Consumers Gas Company, Reading, Pa., and in 1944 went to Nashville Gas and Heating Company, Nashville, Tennessee, as vice-president. On January 2, 1945 he was elected president of that Company where he remained until going to Harrisburg. He succeeds the late Louis C. Smith.

Mr. Richards has served on several committees of the Pennsylvania Gas Association and was chairman of the Distribution Committee. He has taken an active part in many civic affairs. While in Reading he was elected vice-president of the Y. M. C. A., was active in the Community Chest Organization, and was on the boards of a number of civic organizations.

is a graduate of Stevens Institute of Technology and began his career as a gas utilization engineer for Consolidated Gas Company in New York. Following this period, he was industrial gas sales engineer for Maxon Premix Burner Co. and for 15 years was general sales engineer for American Gas Products Corp. When the latter firm was absorbed by the American Radiator & Standard Sanitary Corp., Mr. Combs continued as house heating and air conditioning engineer. He became assistant secretary of the Industrial and Commercial Gas Section last September.

Ligon Heads Nashville Gas and Heating Company

ON January 1, W. H. Ligon became president of the Nashville Gas and Heating Company, Nashville, Tennessee, succeeding L. R. Richards who has been made president of the Harrisburg Gas Company.

Mr. Ligon is a native of Atlanta, Georgia, and a graduate of Georgia School of Technology. Upon graduation he entered the junior engineering course of the Atlanta Gas Light Company and its affiliates. Upon completion of the course he joined the Central Indiana Gas Company and its associated Indiana companies leaving them to become general gas superintendent of the Gulf States Utility Company at Baton Rouge, Louisiana.

In 1939 Mr. Ligon joined the staff of the Atlanta Gas Light Company as industrial sales engineer and was later made general superintendent. From this position he moved to Nashville.

Mr. Ligon has been active in civic and industry work, being a director of Southern Gas Association and a past president of the Exchange Club of Atlanta. His wife and two children will join him in April in his new home in Nashville.

Joins Cribben and Sexton As Chief Engineer

APPOINTMENT of Dr. Frederick Port as chief engineer has been announced by Cribben and Sexton Company.

Dr. Port received his B.S. degree in chemical Engineering at the University of Illinois. In 1936 he attended M.I.T. as staff member and graduate student, and was granted the degree of Doctor of Science in Chemical Engineering in 1939.

From 1939 to 1942 Dr. Port was associated with the Republic Steel Corporation in Chicago as head of the Combustion Engineering Department.

From 1942 until recently he served in the Army as ordnance officer in procurement work. His Army rank was Captain.

Promotions at McCall's

E LIZABETH SWEENEY, formerly prominent in gas industry home service circles, and recently food and equipment editor of *McCall's Magazine*, has been appointed director of the household equipment department of *McCall's*. Mrs. Susan Adams, associate editor in charge of food presentation for the past year, becomes food editor.

Milener to Coordinate General Research, Combs Becomes Industrial Gas Secretary



Eugene D. Milener

and Commercial Gas Section to succeed Mr. Milener.

Mr. Milener's new duties consist of co-ordinating the general and technical utilization research of the Association. In this capacity, he will continue to serve as secretary of the Co-ordinating Committee on Research, the Domestic Gas Research Committee and the Industrial & Commercial Gas Research Committee. Coordination of Gas Production Research continues to be directed by Edwin L. Hall.

Mr. Milener joined the A. G. A. staff in 1928 in connection with the organization of the extensive program of research and development in industrial gas utilization which he has continued to supervise. In 1935, his

responsibilities were increased to include a program of fundamental research in domestic gas utilization under the direction of the Committee on Domestic Gas Research. More recently he has taken on new duties as a result of the greatly enlarged A. G. A. research program.

A graduate of Baltimore Polytechnic Institute and of the University of Maryland, Mr. Milener also studied engineering at Johns Hopkins University. Before joining the A. G. A. staff, he was employed by the Consolidated Gas Electric Light and Power Co. of Baltimore.

The new secretary of the Industrial and Commercial Gas Section, Mr. Combs, has had 25 years' experience in the gas industry. He

WORLD CHAMPIONS

HERE is a challenge, addressed to utility companies all over the world:

Do you have a meter reader who can match the record of The Brooklyn Union Gas Company's George P. Woll, who has taken 991,754 consecutive readings without an error, or BU's Charles V. Dillon, who has rounded out 16 years' perfect reading?

Pending receipt of news to the contrary, *Gas News*, BU magazine claims world championships for these two employees. Challenges should be addressed to Editor, *Gas News*, 176 Remsen Street, Brooklyn 2, N. Y.

Retires After 31 Years With Pittsburgh Gas Utility



E. J. Egan

ral gas company.

Mr. Egan has been actively engaged in natural gas operations most of his life. His early

contacts with the industry were in the field of pipe line construction in various parts of the country.

His first association with The Manufacturers Light and Heat Company was as foreman at Steubenville, Ohio, and from there he was later transferred to the Pittsburgh distribution area. Thereafter he went to the general office of the company in Pittsburgh, where, through his outstanding ability, he was promoted step by step through various managerial positions exercising supervision over the production, transmission, distribution and utilization of natural gas to the position he presently holds with the company. His wide knowledge of the various phases of the business has made him a respected and well known figure in the industry in the area.

Mr. Egan is a director of The Manufacturers Light and Heat Company and of the Pennsylvania Natural Gas Men's Association. He is a member of the American Gas Association.

Drew Appointed Ass't Promotional Director



Edward Drew

for many years, will assist Col. John H. White, Jr., director of promotion of the Association, in co-ordinating sales promotion activities on a national scale.

Born in Oakland, California and a graduate of the University of California, Mr. Drew served in the Navy in World War I and was associated with San Francisco newspapers. He entered the banking field with the Union Trust Co., now the Wells Fargo Bank and Union Trust Company. In 1922 he joined the American Trust Co., San Francisco, serving as promotion and advertising manager and in other capacities before being elected vice-president.

Mr. Drew was appointed director of public relations, California Bankers Association in 1939, after having served as president of the Trust Division of the Association. He conducted customers relations programs, organized business building campaigns and directed a 500-man speakers' bureau for the California Association. Also he created and supervised state-wide high school public speaking contests on American Citizenship and essay contests on banking.

Joining the staff of the American Bankers Association in 1942, Mr. Drew was appointed deputy manager the following year. As secretary of its Public Relations Council he cre-

ated and directed a national promotion and public relations campaign and supervised preparation and distribution of sales and public relations material for various state bankers' associations and the 15,000 members of the American Bankers Association.

Mr. Drew was secretary of the Association's Ration Coupon Banking Committee; secretary of the Commission on Country Bank Operations and in charge of the nationwide promotional and educational campaign conducted by the Postwar Small Business Credit Commission. He has assisted state and local bankers' associations as well as individual banks to organize and operate new business and customer relations programs, as well as aiding in veteran welfare activities, community projects and cooperative movements with other organizations and industries.

E. H. Vieregg Retires

EML H. VIEREGG, manager of the Northwestern Public Service Company, Grand Island, Nebr. retired after serving more than 30 years in the gas industry Jan. 31.

It was in 1915 that Mr. Vieregg became superintendent of the Grand Island Gas Company, which was bought by the Central Power Company in 1924. Meanwhile he had become manager of the company, a capacity he retained until his retirement.

Natural gas replaced artificial gas in 1931. In January, 1941, the Central Power Company sold its gas business to the Northwestern Public Service Company.

In 1930 he was president of the Mid-West Gas Association. Throughout his career, Mr. Vieregg has been active in civic affairs. He was a city councilman in 1912, was for two years president of the Liederkrantz, is past president of the Chamber of Commerce, and the Kiwanis club.

Head Succeeds Simons As Houston Manager

W. B. HEAD, JR., has assumed his duties as manager of the Houston division of the United Gas Corporation following retirement of K. L. Simons, head of the division since 1930, it has been announced by United Gas vice-president, J. V. Strange. After 44 years in the utility business, Mr. Simons, who is 67 years of age, retired to return to his native South Carolina.

Of Mr. Simons, who was active in Chamber of Commerce work and was president of Sam Houston Area, Boy Scouts of America, Mr. Strange said:

"It is with greatest regret and deepest appreciation of long years of most effective and faithful service that Mr. Simons' retirement is announced. During his 44 years in the gas industry, he has won recognition as one of the outstanding executives in the business in this part of the country. The best wishes of the entire United Gas organization go with him into retirement."

James A. Wilson, who was manager of the United Gas, Monroe, La., division was raised to assistant manager of the Houston division.

Mr. Head was born December 15, 1906, at Grand View, Tex. He is the son of late W. B. Head, who was a noted educator and one of the founders of the Texas Power and Light Co. and other utilities. A graduate of Dartmouth College in 1927, he won nationwide recognition in utility circles in 1935 when he served as president of the Oklahoma Utilities Association and again in 1940 when he was named vice-president of the Missouri Utilities Association.

The new assistant division manager, Mr. Wilson, is a native of Quanah, Tex. He entered the gas utility field as an employee of the Houston Gas and Fuel Co. in 1928.

Home Service Director At Ann Arbor



Margaret W.
Andersen

Mrs. Andersen succeeds Mrs. Ruth Bush who is resigning after serving with the company since 1935.

Mrs. Andersen was graduated from Michigan State College with a bachelor of science degree in home economics in 1938. She has been associated with Michigan Consolidated Gas Company in Grand Rapids for seven years.

Columbia Operating Companies Combined



Irving K. Peck

In a move aimed at the further simplification of one of the nation's largest natural gas companies, Stuart M. Crocker, president of the Columbia Gas & Electric Corporation, announced that two of the Columbia System's operating groups will be combined under one management as of April 1, 1946.

Columbia's Binghamton Group operating in southern New York and northern New Jersey will become part of the system's Pittsburgh Group which comprises production, transmission, and distribution properties in western and southern Pennsylvania, eastern Ohio, northern West Virginia, and western Maryland.

The companies comprising the enlarged group will have headquarters in the Union Trust Bldg., Pittsburgh, Pa. The Binghamton Group com-

panies, namely Binghamton Gas Works, Home Gas Company, The Keystone Gas Company, Inc., and the Eastern Pipe Line Company in New Jersey will be managed from this headquarters together with the presently operated Pittsburgh Group Companies, The Manufacturers Light and Heat Company, Natural Gas Company of West Virginia, Cumberland and Allegheny Gas Company, and Gettysburg Gas Corporation.



J. V. Colley



W. P. Sadler

Charles E. Bennett, since 1935 president of the Pittsburgh Group, will head the expanded operations. Irving K. Peck, for 11 years president of the Binghamton organization will be vice-president and general manager of the combined properties.

W. P. Sadler, now treasurer of the Pittsburgh affiliated companies, will be elected a vice-president on April 1, and will supervise financial policies of the enlarged group. J. V. Colley, treasurer of the Binghamton Group goes to Pittsburgh on that date to succeed Mr. Salter as treasurer of the combined operations.

Paterson Awarded Times-Picayune Cup



A. B. Paterson

The Loving Cup, awarded by *The Times-Picayune*, oldest newspaper of New Orleans, usually goes to the citizen considered to have performed the greatest altruistic service for the community during the outgoing year. However, in Mr. Paterson's case, the committee decided to make the award "on his record of years of civic services, the results of which have increased the importance of New Orleans as an industrial and commercial city and as an educational and cultural center."

Instituted in 1901, the Loving Cup has been awarded annually, except in 1908 and 1909.

The committee citation honoring Mr. Paterson read in part:

"Mr. Paterson's leadership has been devoted

to a variety of worthy endeavors. Charitable and humanitarian movements, commercial and financial undertakings, educational and character building institutions, public health and safety organizations—all have benefited from his sound counsel, wise direction and energy. He has not accepted committee assignments or civic appointments merely to lend his name to an organization or movement. On the contrary, he has recognized his responsibilities to his community and has discharged them with distinction."

Mr. Paterson, president of the Crescent City utility since 1930, has been identified with many phases of the gas industry over a long period of years. Prior to 1930, he served as the company's vice-president and general manager.

One of the organizers of the Southern Gas Association in the early part of the twentieth century, he has always been extremely interested in its activities. He is also a member of the American Gas Association and once served as its delegate to the Chamber of Commerce of the United States of America.

He was born in Blantyre, Ontario, Canada, on January 20, 1883. Before going to New Orleans Public Service, Inc., in 1920, he had been vice-president and general manager of the Meridian Light and Railway Company in Mississippi.

Emery Appointed District Manager

ROBERTS & Mander Stove Company, Hagerstown, Pa., has announced the appointment of John H. Emery as district manager for Metropolitan and New York State Areas.

R. S. Agee, vice-president of Roberts & Mander, also announced the opening of a new factory branch office and showroom at 1 Park Avenue, New York City, where Mr. Emery will make his headquarters. Modern kitchens and gas ranges will be on display in the showroom, which will also serve as a training center for utility and dealer sales and service personnel.

Home Service Director Named by Tappan

MRS. PAULINE TREISCH, former home service director for the Mansfield district of the Ohio Fuel Gas Company, has been named director of home service for the Tappan Stove Company.

She succeeds Florence Windecker who resigned to enter another field of work.

A graduate of Ohio State University, Mrs. Treisch taught home economics at Glenford, O., high school before starting with the Ohio Fuel Gas Company where she was engaged in home service activities for 10 years.

She is a member of the American Home Economics Association and was recently named a member of the American Gas Association Home Service Committee.

Get New Posts in Public Service

ANNOUNCEMENT has been made of the following appointments in the commercial offices of Public Service Electric and Gas Company of New Jersey:

Louis R. Quad to be division commercial manager, Central Division, succeeding Edward A. Driscoll, who died January 8. Mr. Quad was assistant commercial manager, Newark Commercial Office.

William M. Penfield to be assistant commercial manager, Newark. He was assistant to the commercial manager, Newark.

Spencer A. Moore to be assistant to the commercial manager, Newark. He was power Sales Representative, Jersey City Commercial.

Setchell and Shanley Return from Service

MEMBERS of American Gas Association headquarters personnel returning from service in the armed forces last month included J. Stanford Setchell, assistant utilization engineer and Thomas J. Shanley, statistical analyst.

Mr. Setchell, who had joined the A. G. A. staff in 1936, was commissioned an ensign in the United States Naval Reserve on May 25, 1943, and ordered to active duty on Sept. 28,

1943. Following indoctrination at Fort Schuyler, Bronx, N. Y., and study at the General Ordnance School, Navy Yard, Washington, D. C., he served as instructor at the latter school from Feb. 1944 to Sept. 1945. He advanced to the grade of Lieutenant (j.g.) on Jan. 1, 1945. He was executive officer at the U. S. Naval Magazine, Montauk, L. I., N. Y. from Sept. 1945 to Feb. 1946.

Mr. Shanley had more than nine years' service with the A. G. A. before entering the Army in June, 1943. He helped activate the

574th Anti-Aircraft Artillery at Camp Edwards, Mass., and maneuvered at Camp Claiborne, La. In December, 1944, he was shipped to England and saw action with the Third, Seventh and First Armies in Luxembourg, The Saar Basin, Rhineland, Ruhr pocket, central and southern Germany. After the surrender of Germany, he was assigned to occupation forces of the Third Army in the Munich area. He was a Staff Sergeant at the time of his discharge early this year.

Koppers Executives Retire



C. J. Ramsburg

RETIREMENT of two executives of Koppers Company, Inc., has been announced by J. P. Williams, Jr., president of the company. Those retiring are: C. J. Ramsburg, vice-president, Research Division; and H. B. Kirkpatrick, manager of the Koppers Building.

Mr. Ramsburg, who lives at 612 East Drive, Sewickley, Pa., joined the H. Koppers Company, Chicago, a predecessor of the present company, in Chicago in 1913 as vice-president. A member of the class of 1899 at Cornell University, Mr. Ramsburg's first business association was with The United Gas Improvement Company in Philadelphia, where he served in various capacities ranging from works chemist to engineer of manufacture.

H. B. Kirkpatrick

In 1910 he made a study of coal gas production in Europe. He participated in an international conference on nitrogen in 1928 and in the Second World Power Conference in Berlin in 1930.

Mr. Ramsburg is a member of a number of engineering and scientific societies in the United States and abroad. He has been an outstanding contributor of technical articles to professional societies and conferences, and is widely known throughout the gas, coke, and steel industries and in the engineering profession. He is a recipient of the Beal Medal awarded by the American Gas Association. He also has been active in Pittsburgh civic and cultural affairs. He was born in Washington, D. C.

Mr. Kirkpatrick, 4405 Schenley Farms Terrace, Pittsburgh, was born in Anna, Ill., and graduated from the University of Illinois in 1901. He joined the H. Koppers Company in Chicago in 1912 as an estimator and was engaged in sales work from 1913 to 1929

when he became manager of the Koppers Building, Pittsburgh.

Active in Pittsburgh civic affairs, he has served as president and a director of the Pittsburgh Chamber of Commerce, the Building Owners and Managers Association of Pittsburgh and the Middle Atlantic Conference of Building Owners and Managers, and as a director of the Better Business Bureau and Taxpayers League. He also has served as a member of the Board of Education, City of Pittsburgh, and is now president of the board.

Mr. Kirkpatrick is succeeded as manager of the Koppers Building by J. B. Sellers.

Brooklyn Union Organization Changes

JAMES J. DEELY, new business manager, The Brooklyn Union Gas Company, has announced the following appointments and reassessments, effective February 1:

Joseph A. Reynolds, from acting retail sales supervisor to domestic sales manager; John B. Frost, from assistant industrial sales manager to retail sales supervisor; Carl Below, from district sales manager to supervisor, apartment house division; Edward A. Koster, from supervisor, apartment house and new development divisions, to supervisor, new development division; Carlton W. Roll, from industrial sales engineer to assistant industrial sales manager; Henry A. Diekmann, from coordinator to supervisor, house heating division; and Richard G. Kopff, from district sales manager to coordinator.

Koppers Expands

ACQUISITION of the entire common stock of Wailes Dove-Hermiston Corporation, of Westfield, N. J., by Koppers Company, Inc., of Pittsburgh, is announced in a joint statement issued by J. N. Forker, Koppers vice-president, and Linden Stuart, president of the New Jersey company.

U. G. I. Director

THE United Gas Improvement Company announced that, at a meeting of its Board of Directors held Feb. 26, Henry R. Pemberton, director of finances of the University of Pennsylvania, was elected a member of the Board.

Committee Calendar

MARCH

2 •Committee on Development and Use of Gas Industry Statistics, Chase Hotel, St. Louis, Mo.—R. E. Ginna, Chairman

6 •New York-New Jersey Executive Council, Residential Gas Section, A. G. A. Headquarters, New York, N. Y.—J. J. Wholey, Chairman

11-12 •Refrigeration Committee, Residential Gas Section, Servel Plant, Evansville, Ind.—R. J. Vandergriff, Chairman

11-12 •Customer Activities Group Committee, Edison Electric Institute Headquarters, New York, N. Y.—J. W. Roper, Chairman

13 •Joint A. G. A.-E.E.I. Insurance Committee Meeting, New York, N. Y.

13 •House Heating and Air Conditioning Committee, Residential Gas Section, Congress Hotel, Chicago, Ill.—Raymond Little, Chairman

14 •Domestic Range Committee, Residential Gas Section, Congress Hotel, Chicago, Ill.—J. W. Lea, Chairman

15 •Dealer Relations Committee, Residential Gas Section, Congress Hotel, Chicago, Ill.—H. S. Christman, Chairman

APRIL

3 •American Gas Association Executive Board, Headquarters, New York, N. Y.—Everett J. Boothby, Chairman

12 •Home Service Committee, A. G. A. Headquarters, New York, N. Y.—Mrs. Lillian P. Dunbar, Chairman

MAY

5 •Committee on National Advertising, Hotel Gibson, Cincinnati, Ohio—D. P. Hartson, Chairman

Obituary

CHARLES EDWARD WOLLMAN, treasurer of the Consolidated Gas Electric Light and Power Company of Baltimore, died suddenly February 10 at his residence, 6 Upland Road. He was 56 years old. A lifelong resident of Baltimore, he entered the service of the company as secretary to the treasurer in 1907. He subsequently became assistant secretary and assistant treasurer and on February 1, 1938, was elected treasurer.

He was a member of the Board of Trustees of the Seventh Baptist Church and a member of its Finance Committee, also a member of the American Gas Association, the Baltimore Association of Commerce and the Baltimore Country Club.

He is survived by his widow, Louise K. Wollman and four daughters: Mrs. George Douglas Reed and Mrs. Charles P. McCormick of Baltimore; Mrs. Leroy J. Sheets of Severna Park, Md.; and Mrs. Harry G. Deaver, Jr. of Minneapolis, Minn.

SELL THE DIFFERENCE

(Continued from page 99)

water that hot," or, "All of our cheap heaters will become obsolete" then expect the hot water solution to the hot water requirements to come from auto-water heaters using fuel other than gas.

The new hot water requirements are coming like a mighty tidal wave and will make obsolete all water heaters that can't meet the requirements. This should not scare us. The insulated range and heat control made obsolete many millions of gas ranges but that didn't hurt the industry; it helped it. Gas ranges built to "CP" standards made obsolete millions more gas ranges, but it helped the gas range industry and raised gas cooking to a higher level. F.M. is going to make obsolete many millions of radios and television, when it comes, will make obsolete more equipment. Our citizens have learned the value of replacing obsolete equipment with improved equipment and are looking for something new in gas water heating.

Now is the time for a gas water heater, built to "CP" specifications set high enough over the minimum A. G. A. standards to guarantee certified performance, so that the public can use it as a buying guide to insure getting a water heater that will deliver hot water economically in the quantity and quality that the modern home demands.

The new trend is on its way. Let us not stand in the way of progress. Walter Beckjord some time ago said, "Changed habits of living, in diet, in home building, have made a noticeable difference in our domestic sales. Such shifts are characteristics of American life. They offer fortunes to the men who can foresee them and get in front of them, but they mean the biggest kind of trouble to the men who get caught in the squeeze." Let's be sure the gas industry doesn't get caught in the squeeze.

God gave us gas—with its inherent characteristics. Let us use them and quit abusing them.

ADVANCING THE ART OF BROILING

(Continued from page 108)

flame burner, burners equipped with ceramic and nichrome wire radiants and with a low temperature broiler. Since these are results of preliminary tests conducted by a complex arrangement whereby the microsections were prepared in one institution, and the photographs by a separate company both of which were not fully appreciative of the main objective definite conclusions cannot well be drawn. Results indicate, however, that this method is conducive to satisfactory results from which a measure of "quality" may be eventually derived. In this connection, facilities to conduct this work entirely within the Laboratories have been secured recently. With this additional equipment, greater progress and earlier completion of this investigation is expected.

Only highlights of the completed phases of these investigations have been presented at this time. A detailed report which will shortly be made available in bulletin form is already underway. It is felt that this bulletin will be a valuable contribution to the industry and prove to be a useful tool in the hands of the development engineer.

1946 GAS PROMOTION EQUIPMENT

(Continued from page 123)

should overlook the advantages which it has enjoyed in having a well-financed, aggressive, and progressive company in the development stages of this appliance. Its present popularity is based upon its excellent trouble-free service, and with the conditions which have existed in the gas industry we have been spared the many headaches that the electrical industry has had due to fly-by-

night manufacturers putting out numerous models of mechanical refrigerators which were left without service facilities. The fact that the Servel company has had but one interest, and that is the gas industry, has enabled us to build the future of this load on a very firm and solid foundation.

The modern gas refrigerator has many advantages over competition, among which are economy of operation—and this is especially true in natural gas areas—silence, no moving parts, a history of long trouble-free, satisfactory operation, and styling which is comparable to that of any refrigerator on the market, and the gas industry should not be satisfied without an increasingly large percentage of this business.

The gas clothes dryer has excellent possibilities for increased future sales, and should not be overlooked in our postwar sales program. It is an item that lends itself especially well to promotion by the Home Service Departments for use with automatic home laundries and hot water service.

Of course, there are many other gas using appliances that will play a part in our future promotional activities. The all year air conditioning unit is one that is destined to play a major role in our future sales programs, and in many parts of the country gas heating is one of the basic load-building services. As home service people you should be familiar with all these services, although due to their technical nature, their sale and installation must be handled by trained engineers.

These are some of the modern appliances which can be placed in the New Freedom Gas Kitchen and the "All Gas Home of Tomorrow." The gas industry has developed many other tools which will be used in its program to out-sell competition.

HOME SERVICE WORKSHOP

(Continued from page 125)

Thelma Bly, Wisconsin Power & Light Co., Fond du Lac. Miss Bly explained that for a regular Wednesday afternoon cooking school, invitations were sent out each week with the service bills to certain areas in the city. This method made it possible to cover the city twice a year.

In Binghamton, N. Y., Mrs. Matson explained that their department gives school demonstrations on the use and care of gas equipment. She also described a "Gasco Better Breakfast" program developed for several department stores for the hour preceding the morning opening.

Selection and Training of Home Service Personnel

F. M. Rosenkrans, new business manager, Gas Service Company, Kansas City, said the importance of securing qualified personnel cannot be over-emphasized as this is a basis for the development of an aggressive outstanding home service program. He presented considerations based on experience in his company that have been helpful.

Jeanette Campbell, Minneapolis Gas Light Co., chairman of a home service subcommittee

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Home Service on the Job

Important in the program of both workshops was an actual portrayal of a sales-slanted demonstration. Helen Brown, Kansas City Gas Co., presented a smoothly moving demonstration as given before a women's club group. In Pittsburgh, Flora Dowler, Manufacturers Light and Heat Co., introduced a similar interpretation and showed a manifold of various gas range burners prepared so as to be carried around like a suitcase for use in school demonstrations and for the training of new home service personnel.

Following the demonstration, the subject of "Demonstration Techniques" was developed in Kansas City by Ruth Shank, St. Louis County Gas Co., Webster Groves. In a thought-provoking discussion of the attributes of good demonstration, Miss Shank discussed ten personality attitudes and qualifications as follows:—a definite extrovert personality pattern, intelligence, a willingness to assume responsibility, executive ability, cooperation, a sense of organization, the ability to adjust to changing conditions, the ability to give criticism without malice and take criticism without resentment, stamina or capacity for steady orderly production and the tenth point—good manners and goodwill. The techniques of demonstration presentation were similarly presented at Pittsburgh by Helen Kirtland of the New Jersey Power & Light Co., Dover, who called the staging of a demonstration an art to be acquired.

Home Calls

From the sales-slanted demonstrations the program proceeded to sketches of four home calls. In Pittsburgh, the presentation was given by the home service department of the Ohio Fuel Gas Company. Hulda Ungericht Wells, the director, presented the skits which were acted out by Mary Huck, Columbus, and Eileen Weikert, Springfield. Mrs. Wells explained that home calls offer an excellent opportunity for a company to personalize its various services and promote the use of its product. The calls presented were the "new appliance call," the "new customer call," the "request call" and the "survey call."

Mildred Clark, Oklahoma Natural Gas Co., presented the four home call sketches at the Kansas City workshop. Four members of her department, Rosemary Locke and Maxine Hanley of Tulsa, Lucille Newlin and Marie Parks of Oklahoma City, portrayed the parts of the home maker and the home call visitor.

In both workshops the home call skits evidenced the value of calls in the home for explanation, for clearing up problems, for making friends for the gas company and thereby increasing the gas load.

Factors Governing Food Products and Food Preparation were discussed at both workshops by Elizabeth Sweeney, editor of household

LP-Gas for the Manufactured Gas Industry

IN view of the continued interest in the use of liquefied petroleum gases by manufactured gas companies, it was felt that an up-to-date bibliography of recent material would be helpful. The items which have been starred relate exclusively to systems op-

erating 100% on LP-Gases. The other articles deal, at least in part, with the use of LP-Gas for peak load purposes. The papers cover the engineering and economics involved in these various operations.

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equipment, McCall's Magazine. Her paper presented valuable and up-to-date information on new developments in foods—particularly care and preparation of new frozen foods both raw and cooked. In equipment, the research on the use of the pressure sauce pan was explained as well as a general discussion on what home makers need to know in the variance of utensil size, shape, condition, color and material as factors which determine the finished product.

Discussion Groups

An important part of each workshop program was the time given for discussion introduced by leaders in different types of departments. Discussion was animated and the period allotted was far too short for the

questions brought up. Leaders who participated were: Mary N. Hall, Elizabethtown Consolidated Gas Co., Elizabeth, N. J.; Frieda Barth, Michigan Consolidated Gas Company, Detroit, Mich.; Jane Watkins, Allentown-Bethlehem Gas Co., Allentown, Pa.; May McLoughlin, Central Illinois Light Co., Peoria, Ill.; Fay Rudolph, Southern Indiana Gas & Electric Co., Evansville, Ind.; Vera C. Ault, Public Service Co. of Colorado, Denver, Colorado.

In closing each workshop, Mildred Clark, Oklahoma Natural Gas Co., asked the group to carry back to their jobs the spirit of the programs which had been developed.

Appreciation was expressed for the hospitality of the local gas companies who contributed so much to the success of the meetings. Recess refreshments in Pittsburgh were



Irene Muntz, Rochester Gas & Electric Corp.; Mrs. Vera C. Ault, Public Service Co. of Colorado; and Mary Louise Hurster, Laclede Gas Light Co., photographed during the A. G. A. Home Service Workshop at Kansas City

provided through the courtesy of the Equitable Gas Co., Manufacturers Light and Heat Co. and the Peoples Natural Gas Co. In Kansas City, the Gas Service Co., the Kansas City Gas Co., and the Wyandotte County Gas Co. provided similar hospitality. A special tribute was given to the excellent work of the chairmen of local arrangements in each city,—Colleen Fowler of the Kansas City Gas Co. and Kathryn Barnes of the Equitable Gas Co. Exhibits at the conferences were in charge of Ruth Severon of the Peoples Natural Gas Co. in Pittsburgh and Ada Harbaugh of the Gas Service Co., Joplin, Mo., in Kansas City.

Panhandle Line Improvements

AN improvement program costing substantially more than ten million dollars was recently completed in record time by the Panhandle Eastern Pipe Line Company, of Kansas City, in an effort to insure a more adequate natural gas supply to the industrial areas of Ohio, Michigan and West Virginia.

The program, which called for the installation of 33 new compressor units aggregating 32,800 horsepower, the laying of 31 miles of 24-inch pipeline and other improvements, was completed in seven months from the issuance date of the Federal Power Commission's certificate of convenience, company officials declare.

The new equipment will enable the company to pump an additional 50,000,000 cubic feet of gas daily from Texas to Ohio, West Virginia, eastern Indiana and lower Michigan, bringing its daily capacity up to 380,000,000 cubic feet.

Telephone Retort

NOT everyone agrees that the inaccessible executive (telephone-wise) is one of the bane of humanity. One dissenting voice was raised by John E. Kelly, consulting engineer of Pittsfield, Mass., who wrote as follows about E. W. Henver's "Who's Calling" feature in the February issue:

"The 'who's calling' mechanism was not invented solely to pamper vanity. In large

cities especially it is, or was in pre-depression times, a virtual necessity if the callee was to get any work done. I maintained an office in New York City for some years, small potatoes as metropolitan offices go, but with several telephone lines. My secretary, of an analytical turn of mind, once calculated that up to 40% of all incoming calls (not including personal ones) asking for me, could be handled by others, or were non-revenue producing. Salesmen, stock, insurance and others and brokers for shares and shipping were among the most persistent in this class. One such complained to me, when he got thru, 'you're harder to reach than Mr. Herbert

Personnel Service

SERVICES OFFERED

Operating Executive and General Manager familiar with all phases of gas production and distribution. Technical education, M.E. degree, with wide experience including considerable sales. Rehabilitation work a specialty. Now employed but available for attractive opportunity. Further details on request. 1508.

Sales Executive with large acquaintance gas and electric utilities in Eastern states—have technical education and employed as sales manager for large manufacturer gas appliances for 13 years—will consider any line with possibilities —available after January 15th. 1510.

Experienced gas customers' service man, familiar with the installation and servicing of space heating equipment and all other types of gas appliances, meter and regulator installation and leak repair. 30—Married. 1511.

Gas Engineer, Chemical Engineering Graduate with over 20 years' experience supervising construction and operation coal, oven and water gas plants and low and high pressure distribution systems. Experienced in customer service, meter repairs and records, account classification, estimating, budgets. 1512.

Fuel and Combustion Engineer. At present a Commander in the Navy available June. Five years in manufacture of gas and coke by-products. Two years with nationally known testing and research laboratories. Five years teaching college chemistry. One year teaching electricity, radio and electronics. Proven ability to handle men. 1514.

Hoover,' but it was a defense mechanism instituted of necessity. The defense rests."

Not that we want to straddle any fences, but there are times when the editor agrees with both Mr. Kelly and Mr. Henver.

Suppliers Plan Meetings

THE Gild of Ancient Suppliers has completed its 1946 organization and plans two major gatherings: Ninth Anniversary Dinner at Galen Hall, Wernersville, Pa., during the May 21-23 convention of the Pennsylvania Gas Association; and the annual Convocation and Wassail at Atlantic City, N. J., during the week of Oct. 7 at the convention of the American Gas Association.

Plans for both affairs were discussed at a meeting of the Great Council at the Engineers' Club, New York City, Jan. 24. Harry A. Grassmann, Inner-Tite Clamp Corp., Elizabeth, N. J., was reelected sergeant-at-arms, and Joseph A. Messenger, Buell Engineering Co., New York, N. Y., was elected to the newly created office of Master of Revels. Also present at the meeting were Mayor Joe A. Mulcare, Mulcare Engineering Co., New York, N. Y.; Immediate Past Mayor C. Edwin Bartlett, Bartlett & Co., Philadelphia, Pa.; Keeper of the Treasure Glenn H. Niles, consulting engineer, Ridgewood, N. J.; and New York Warden J. Albin Johnson, Ruud Mfg. Co., Long Island City, N. Y.

Engineer with wide experience in production and distribution of natural and manufactured gas, management of electric gas and water utilities, rehabilitation of properties, appliance work and wide contacts with industrial customers and their problems, desires connection with progressive utility. Employed but available on fairly short notice. 1515.

Manager of Operations and Labor Relations, wide experience in all phases of gas industry, design, construction, operation and labor management issues. 1516.

20 years' experience as **Executive and Division Manager**. Received training by serving apprenticeship in every department of large Southern gas plant. Thorough knowledge all phases construction, maintenance, organizing sales campaigns, training collectors and general operations—water gas—coal gas—butane—natural gas. Married—two children. Military Prep education. 42. 1517.

POSITIONS OPEN

Eastern Gas Company having plant of 12 million daily water gas capacity has opening for **Assistant to Superintendent**. Production, maintenance and design experience desirable. Reply giving full details of age, education and experience. 0445.

Assistant to Distribution Superintendent, man for low and medium pressure Gas Distribution System. Location New England. Give complete information including age, education, experience and salary expected. 0446.

Gas Engineers with experience on design of Carburetted Water Gas Plants and Equipment. 0447.

Man familiar with general utility accounting and customer billing as **Assistant Controller** for large middle western utility. 0448.

One of the largest gas companies in the Middle West has an excellent opportunity for a **Mechanical Designer** 30 to 40 years of age with experience in plant layout, power plant equipment and reinforced concrete and steel. This position is not a temporary one and all replies will be treated confidentially. 0450.

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